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THE MODERN CONCEPT OF HYPERTENSION

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The view that the kidney is the organ primarily involved in the pathogenesis of hypertension was expressed more than a century ago by Richard Bright[1], but until very recently this concept failed to receive general acceptance. It is only in recent years that it has been established experimentally on a firm basis. As in the case of many other diseases, an understanding of the nature of hypertension was delayed until it became possible to produce the condition in laboratory animals. As early as 1879, Grawitz and Israel[2] had induced an elevation in the blood pressure of dogs by partially ablating their kidneys. Subsequent workers utilized other procedures, such as ligation of the renal veins, partial nephrectomy, and exposure of the kidneys to the x-ray, in an attempt to induce hypertension. These methods, however, were too inconstant in their effects and entailed so much interference with renal excretory function as to cast doubt on the significance of the results.

The classical work of Goldblatt and his co-workers[3] in 1934 offered a readily reproducible method for inducing hypertension in the dog and demonstrated that the resulting disease resembled the so-called "essential" hypertension occurring in man, in that there was no accompanying interference with renal excretory function. The procedure used by Goldblatt of applying a silver clamp to the renal artery has served as a basis for many studies in laboratories throughout the world, which have contributed much to our understanding of hypertension.

The Experimental Induction of Hypertension

In addition to the procedure devised by Goldblatt several other methods have been described for inducing hypertension in laboratory animals, and these have been widely used, particularly in rodents, which are preferable to dogs for certain studies. Prior to Goldblatt's original publication Chanutin and Ferris[4] had induced hypertension in rats by subtotal nephrectomy. Page[5] demonstrated that the application of a cellophane capsule to the kidney offered a simple procedure for inducing hypertension in dogs, and a modification of this technique may be used with equal success in the rat[6]. More recently we have found that in the rat a ligature passed in the shape of a figure 8 over the poles of the kidneys is all that is necessary for inducing hypertension, and we have used this procedure in all our recent work.

The above described methods all involve some interference with the kidney and offer direct evidence that this organ is in some

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4. Chanutin, A. and Ferris, E. B., Jr.: Experimental Renal Insufficiency Produced by Partial Nephrectomy, Arch. Int. Med. 49:767-787 (May) 1932.
5. Page, I. H.: A Method for Producing Persistent Hypertension by Cellophane, Science, 89:273-274 (Mar. 24) 1939.
6. Grollman, A. and Williams, J. R.: Experimental Chronic Hypertension in the Rat, Am. J. M. Sc. 204:73-79 (July) 1942.

way related to the pathogenesis of hypertension, at least as it is seen in the experimental animal. However, other procedures which involve no direct attack upon the kidney are also effective in inducing hypertension, and these are of considerable theoretical interest in indicating the possibility that extra-renal factors may play a part in the causation of certain clinical forms of hypertension. The occurrence of hypertension in association with lesions of the central nervous system has been simulated by the injection of kaolin into the subarachnoid space. The presence of this foreign body apparently induces a sterile encephalitis which is responsible for the resultant hypertension[7]. The proprioceptive regulation of general vascular tonus is effected through reflexes, the receptors of which are situated in certain localized vascular areas such as the carotid sinus. Section of the aortic and sinus nerves to these areas results in hypertension[8]. Hypertension can also be induced by the injection of certain steroid bodies, such as calciferol[9], the sex hormones, or desoxycorticosterone[10]. The last mentioned observations may have significance in explaining the occurrence of hypertension in certain endocrine disorders such as Cushing's syndrome, in which abnormalities in steroid metabolism are known to occur.

The exact role of the kidney in the etiology of the hypertension induced by the neurogenic or endocrine disturbances just described has not been determined with certainty. It is possible, of course, that these may exert their influence through the kidney, but this fact has not been definitely established.

The Renal Pressor Mechanism

The fact that hypertension is often a concomitant of renal disease suggested to many early workers that the observed elevation in blood pressure was due to the liberation in the body of some pressor substance. As various pressor hormones were discovered (posterior pituitary hormone, epinephrine) these were considered as the agents responsible for the rise in blood pressure. However, except for the rare paraganglioma, in which an excessive secretion of epinephrine causes intermittent hypertension, there is no valid evidence implicating the endocrine organs in the more common forms of hypertension[11].

In 1890 Tigerstedt and Bergmann[12] demonstrated the pressor effects of crude extracts of kidney and suggested that these substances liberated by the diseased kidney were responsible for hypertension as it is observed clinically. Little attention was subsequently given to "renin", as Tigerstedt and Bergmann designated this renal pressor substance. In 1936, Harrison, Blalock and Mason[13] revived interest in renin and suggested that this substance was a product of the ischemic kidney and was the agent responsible for hypertension. This view has been almost universally accepted, although as we shall see later, subsequent work has necessitated much revision in the simple concept that a pressor substance is responsible for the rise in blood pressure. Renal extracts manifesting a renin-like action lose their activity on purification, but regain it when mixed with a globulin-containing fraction of blood serum. Page and his collaborators[14] in this country and Houssay and his coworkers[15] in Buenos Aires have demonstrated this behavior of renin. They designate as renin the substance formed by the kidney, and as angiotonin or hypertensin, the actual pressor substance formed by the enzymic action of renin on a globulin present in blood serum (renin activator or hypertensinogen).

The view that hypertension results from the pressor effect of some substance elaborated by the kidney is enticing because of its very simplicity, and has been widely accepted. However, there are many experimental facts which are opposed to this view and which indicate that the occurrence of hypertension involves a much more compli-

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13. Harrison, T. R.; Blalock, A.; and Mason, M. F.: Effects on Blood Pressure of Injection of Kidney Extracts of Dogs with Renal Hypertension,, Proc. Soc. Exper. Biol. and Med. 35:38-40 (Oct.) 1936.
14. Page, I. H.: Studies on the Mechanism of Arterial Hypertension, J.A.M.A. 120:757-762 (Nov. 7) 1942.
15. Houssay, B. A. and Braun-Menendez, E.: Renin in Experimental Hypertension, Brit. M. J. 2:179-181 (Aug. 15) 1942.

cated mechanism than the existence of a simple renal pressor factor.

The Anti-Pressor Mechanism

Several observations made during the early work on hypertension suggested the probability that the kidney might be responsible for the production of a factor which was absent or was produced in insufficient amount in hypertension. It was believed that this substance antagonized the "pressor" mechanism, and hence the hypothetical substance was designated as the anti-pressor factor. Extracts of kidney tissue were prepared and were found to be capable of reducing the blood pressure of animals rendered hypertensive and, in a few cases, that of patients suffering from hypertension[16]. Similar results were obtained by other observers[17].

The possibility of extracting from the kidney a substance capable of reducing the blood pressure in hypertension suggests that it is the absence of this normal secretion, or perhaps an imbalance between the amounts of pressor and anti-pressor substance which is the cause of hypertension. The latter view is held by most observers, but one can equally well explain the data at hand by the simple view that hypertension is a deficiency disease due to the failure of the kidney to elaborate an essential constituent, in the absence of which hypertension ensues.

If the last named view be accepted one would have to consider renin as merely a product of tissue destruction. In accord with this view is the fact that when autolysis is prevented, no renin[18] is detected in kidney extracts. Experiments on parabiotic rats[19], one of which is rendered hypertensive, also fail to reveal evidence for the existence of a circulating substance present in the blood stream in sufficient amount to raise the blood pressure. The fact that the blood pressure in rats rises following bilateral nephrectomy[20] (and hence after the removal of any possible source of a renal pressor mechanism) is also not explicable by the assumption that hypertension results from the presence of a renal pressor substance. In this connection it may be pointed out that although renin or angiotonin, when injected, simulates in many respects the hemodynamic state characteristic of hypertension as observed clinically, other substances (for example, paredrine) also do the same[21]. Moreover, renin still exerts its pressor effect after destruction of the spinal cord[22], an operation which causes a fall in blood pressure in the hypertensive animal.

Possible Factors Involved in the Pathogenesis of Hypertension

As is evident from the preceding discussion, the simple view that hypertension results from the elaboration of a precursor of a pressor substance by the kidney does not explain all the available experimental data. This is of considerable practical importance, for it demands a re-evaluation of earlier conclusions. Thus, the enthusiasm with which nephrectomy was performed several years ago has given way before the observed fact that this operation is not always followed by a sustained drop in blood pressure, but may even worsen the condition of the patient.

A subject which has elicited much discussion is the relation of renal ischemia to hypertension. In the experimental animal hypertension is induced by procedures which lead to ischemia of the kidney. It has, therefore, been inferred that a similar mechanism must always be the basis of the pathogenesis of hypertension in the human being, despite the evident fact that in many instances, particularly of so-called essential hypertension, there is no marked disturbance of the hemodynamic state of the kidney[23]. Attempts to read into simple deviations from normal renal tubular activity the existence of a sufficient abnormality to explain the development of hypertension are far from convincing.

The term hypertension as used to define a clinical entity is limited to those instances in which there is an elevation of both systolic

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23. Steinitz, K.: Zur Frage der Nierendurchblutung bei Normalen, Hypertonikern und Nierenkranken, Acta med. Scandinav. 109:95-114, 1941.

and diastolic pressures. This excludes such conditions as arteriosclerosis, hyperthyroidism, and aortic insufficiency, in which the elevation is limited to the systolic pressure. If we look upon hypertension as a disease entity due to failure of certain cells in the kidney to produce an essential incretory product, obvious renal injury or ischemia of the kidney need not be present in every patient with hypertension. As in the case of other organs a failure of the kidney due to a congenital heritable weakness will result in the disease as will failure due to direct injury such as occurs in nephritis, malformation, and other renal diseases. Congenital deficiency would account for those instances of essential hypertension in which renal blood flow and excretory function are normal. Further studies are desirable to determine the validity of this view.

Summary

The recent experimental work on hypertension is reviewed. The generally accepted notion that renal hypertension is due to the production of a pressor substance is shown to be indequate to explain all the available facts. An alternate theory, according to which the disease results from failure of the kidney to produce an essential incretory product, is shown to be more compatible with the known facts.

Peacetime Values From a War Technology.—In a world at war one gets the impression that all forces are solely for destruction. When war ends, the new technology will more quickly, efficiently and effectively convert the war effort to the pursuits of peace with an amazing speed. With the tremendous increase in research and development, the commercialization of processes has occurred which would have taken years under normal conditions to reach fruition. Out of the welter of the war effort, values will flow that will increase man's effective span of life with greater satisfaction for living.

Science has already prolonged and saved man's life through germ-killing chemicals, new anesthetics and synthetic vitamins. Through scientific and technical research our food supply has increased in quantity and quality. Synthetic textiles have provided us with more beautiful, durable and sanitary clothing. Plastics will revolutionize the building arts, for the trend is to supplant many house-building and house-furnishing materials with plastics as soon as they can be released for civilian use. Plastics together with new and more efficient fuels will also play a dominant part in our new transportation systems. — Dr. Gustav Egloff: Peacetime Values From a War Technology, Science 97:101 (Jan. 29) 1943.

ROENTGEN THERAPY IN THE TREATMENT OF CERTAIN INFLAMMATORY CONDITIONS

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Numerous writers have discussed the use of low voltage x-ray in the treatment of non-malignant inflammatory diseases. The great variety of conditions in which roentgen therapy has been advocated by some and exploited by others has caused definite and often justified skepticism regarding its use among the medical profession. This has at times kept this useful agent from receiving the attention which it deserves.

It is difficult for physicians to understand how an agent which has been used so largely to treat malignant tumors can also be an effective means of treating acute or chronic inflammation. Some doctors are afraid to take advantage of this method of treatment, because of the deleterious changes which are occasionally observed in patients who have been improperly treated.

Hodges[1] has been a strong advocate of this method of treatment for almost twenty years. His method of treating carbuncles, cellulitis, erysipelas, parotitis and other conditions is still in vogue and has received a wide following.

Desjardins[2] recently published a review of the literature and discussed the theories of tissue reaction to the rays. This reaction is discussed in greater detail by Ellinger in his book on radiation therapy[3].

The action of roentgen rays upon inflammatory tissue has been the subject of much discussion. Any attempt to explain this action must depend on the phase of the inflammatory process. The rays do not act directly on the bacteria but indirectly within the tissues. The superficial wall of the inflammation is broken down and the infection extends to the surface instead of spreading throughout the tissues. All that is really

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2. Desjardins, A. U.: The Action of Roentgen Rays on Inflammatory Conditions, Radiology, 38:274-280 (March) 1942.
3. Ellinger, Frederick: Biologic Fundamentals of Radiation Therapy, New York, Interscience Publishers, 1941.

known about inflammation is some of the major outward manifestations which can be readily observed. It is thought that the acute inflammations respond more readily to roentgen treatment because there is an acute congestion of the infected area with leukocytes and lymphocytes. The blood vessels are contracted and an increasing quantity of plasma seeps through the walls of the vessels into surrounding tissues. The polymorphonuclear leukocytes migrating into the tissues are radio-sensitive, and as they are broken down by x-ray there is an indirect action upon bacteria. In the chronic infections one finds considerable fibrin and fibrosis and often a lesser number of leukocytes. These subacute and chronic infections respond poorly to treatment and must be given smaller doses of x-ray over a longer period of time. It is also a known fact that in inflammations caused by streptococci, leukocytic infiltration is less pronounced than in those caused by staphylococci. These inflammations do not respond so well to a single treatment. We are familiar with the x-ray treatment of acne and furunculosis. It is believed that the reactions of other infections to treatment are essentially the same.

Pendergrass and Hodes[4] recently reported on the use of x-ray in some of the more common infections, but I would like to discuss treatment of a few of the conditions in which roentgen therapy is seldom mentioned.

Herpes zoster in the acute stage responds very favorably to x-ray. The Cornell Medical Center recently reported a series of 35 cases so treated, with favorable results. One was in a patient with trigeminal neuralgia. For years medical authorities have believed that herpes zoster should be treated by absolute rest and supportive measures, and that after a few months, if the pain did not subside, roentgen therapy should be given. Our most striking case was one with involvement of four thoracic segments, with symptoms of only three days' duration. The patient was free of symptoms in less than three weeks.

Rheumatoid arthritis of the spine has always been a difficult problem. X-ray therapy has been tried for several years, but only last year, the orthopedist at the University of Michigan reported a series of acute cases which had responded favorably to treatment[5]. This infection starts usually in the sacro-iliac joint and ascends. Frequently there is very little evidence on the x-ray plate, but clinically there may be muscle spasm involving the muscles of the entire spine. The sedimentation rate is usually elevated and the Weltmann reaction is low. These cases usually respond readily to x-ray, as noted by their relief from pain and muscle spasm and the drop in the sedimentation rate. If the infection has advanced to the stage described by Marie and Struempell, little relief can be offered.

Another largely neglected field for roentgen therapy is in the treatment of the nasopharynx or the sinuses[6]. There are a large number of patients who do not respond to the usual nose and throat therapy. At the meeting of the Southern Medical Association in 1936[7], we reported a series of 500 cases of chronic lymphoid hyperplasia of the nasopharynx and pharynx. These cases were all referred by the otolaryngologist. All cases had been operated upon at least once. Usually there was a diffuse hyperplasia over the entire posterior pharynx, often extending up around the eustachian tubes, and sometimes causing a partial deafness. A series of four to six treatments are given at weekly intervals, then a month is allowed to elapse, and if necessary, a second series is given. Dr. Crowe of Baltimore advocates using radium suspended through the nose and pulled up into the region of the eustachian tubes.

Certain sinus infections respond to x-ray treatment. If it is used with the cooperation of the otolaryngologist, very good results can often be obtained.

Ganglions appearing on the dorsum of the wrist are often very annoying. A surgeon first reported a series of cases treated with roentgen therapy. We have followed the technique employed in his series and our results have been surprisingly good. The treatment consists of first aspirating the ganglion, then shielding it closely and giving 500 r of high voltage x-ray at monthly intervals. The treatment sets up a counter irritation, re-

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5. Smyth, C. J.; Freyberg, R. H.; and Lampe, Isadore: Roentgen Therapy for Rheumatoid Arthritis of the Spine, J.A.M.A., 117:826-831 (Sept. 6) 1941.

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7. Eagle, Watt W. and Reeves, Robert J.: The Treatment of Lymphoid Hypertrophies and Infections of the Pharynx and Nasopharynx by Irradiation, South. M. J., 29:159-163 (Feb.) 1936.

sulting in adhesions and closing the ganglion. There seems to be no damage to the surrounding tissues.

Diphtheria carriers can be rendered negative very readily by irradiation of the nasopharynx. We have treated a series of 15 patients with positive throat cultures, and all were negative after two weeks.

Primary tuberculous cervical adenitis also responds well to small doses of x-ray, and the majority of cases can be cleared up[8]. It does not matter if the glands are caseous or draining. The glands usually do not break down if the dosage is low and if treatments are not given too often. The treatments should always be preceded by removing the tonsils if they are present.

Another group of cases responding to roentgen therapy are the mycotic infections of the skin, especially blastomycosis[9]. After the organism is isolated by smear or culture on Sabouraud's mixture, the patient is desensitized, if he is found to be sensitive to his infection. Roentgen therapy is given in conjunction with the systemic treatment.

Conclusion

We have attempted to stress the importance of considering roentgen therapy as an adjunct in the treatment of inflammations. The x-ray reacts on the outer leukocytic wall, causing the infection to break down and extend to the surface instead of spreading throughout the tissues. The roentgen technique is not stressed here, as that is a radiological problem.

8. Reeves, Robert J.: Roentgen Ray Treatment of Tuberculous Cervical Lymph Nodes, South. M. J. 26:558-560 *(June) 1933.*
9. Hemphill, J. E. and Noojin, Ray: North American Cutaneous Blastomycosis Treated With Superficial Roentgen Therapy, *Am. J. Roentgenol. 48:643-650 (Nov.) 1942.*

Man's struggle to survive is ever present. He has either vanquished or domesticated large animal life. Our present battle is to overcome the ravages of rats, insect life and bacteria; it would seem that the smaller the scale of life the more difficult is the problem of its extermination or control. Even the very nature of some of the smallest forms has presented man with some of his greatest difficulties of discovery and eradication by chemical or physical means. Great strides in this direction have been made, but the ultimate solution is still far off. Increased tempo in research and experimentation along many fronts will ultimately present the remedy, but with the vastly improved tools man is constantly providing for himself, the end is certain to be on the favorable side for mankind.—Dr. Gustav Egloff: Peacetime Values From a War Technology, *Science* 97:102 (Jan. 29) 1943.

THE RORSCHACH TEST

An Important Aid in the Personality Diagnosis

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The childish game of making faces, figures or scenes out of clouds or out of ink blots has a psychological significance which has long been recognized. In 1857 a German psychiatrist, Justinus Kerner[1], expressed the belief that a person's reactions to those ink blots have some psychological value and tell something about the observer. However, he thought that the ink blots had to produce certain responses, and he did not give sufficient consideration to the projection of the subject's ideas into the blots.

In 1895 Binet used ink blots in a more advanced way to test a person's imagination. This idea was taken up by the American psychologist, Whipple. He used standardized ink blots for the first time. Others became interested in this subject, among them Rorschach[2], a Swiss psychiatrist. He worked for ten years on the method, and published his experiences in his "Psychodiagnostik", which is still an important standard work, only recently translated into English[3]. Rorschach found that some of the ink blots he tried evoked responses much more easily than did others. Symmetrical blots can be produced by letting a few drops of ink fall on a sheet of paper, then folding and pressing it together. However, most of these blots would not be stimulating enough to elicit satisfactory results. The Rorschach ink blots on the test cards have to fulfill certain "Gestalt" qualities; and the forms have to be comparatively simple, since complicated pictures make the scoring of all test factors much more intricate. The distribution of the blots within the space of the card must also be according to certain psychological laws. If this is not the case the blots lack the figurative element and they are seen

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2. *Rorschach, H.: Psychodiagnostik*, Bern, H. Huber, 1937.
3. Rorschach, H.: Psychodiagnostics, Translated by P. Lemkau and B. Kronenberg, Berne (H. Huber), 1942.

only as simple ink blots. Blots must be almost completely symmetrical, for very definite reasons: (1) asymmetrical pictures are rejected by a good many people, and (2) symmetry offers equal opportunities to right and left handed individuals.

Theory

In the Rorschach test the subject has no idea what he is tested for and what is expected from him. Therefore, the conscious or unconscious desire of the individual to react in a certain way is eliminated and cannot influence the results of the test. The patient's personality projects its own properties in his response. If we used true pictures of objects or photographs of scenes the opportunities for responses would be greatly limited by reality. At the utmost such a procedure might give an approximate idea of one's imagination or free association. The Rorschach test is not a test of imagination, as it is frequently thought to be. In order to form certain conceptions we depend on memories and traces of previously formed ideas. New experiences —which the test situation represents—elicit those previously formed conceptions and memories, and produce a *certain* response characteristic for the individual. Therefore, the interpretation of the ink blots will depend first upon the memory records of the individual, and secondly upon his selection from his store of memories. Pathological processes will greatly influence either one or both of these two factors. It is significant whether one is stimulated by the whole blot or selects a tiny detail along the edges of the blot. Of course, one single answer is of no significance in itself but only in connection with all the others.

Administration

The administration of the test is comparatively simple. After a short introduction the card is shown to the subject and he is asked what it might be. All responses are recorded. In order to find out the real organization of the subject's personality the test situation is made as comfortable as possible so that his inhibitions will be reduced to a minimum. Only under the most favorable conditions can we expect to obtain a fairly true picture of the personality. During the preparation of the subject for the test any remark which might influence or distort the patient's trend of thought is avoided. After the "performance proper", as the first showing of the cards is called by Rorschach workers, the individual is asked for more details concerning the responses so that the score may be as complete as possible.

Evaluation of Responses

There are three principal factors to be considered in evaluating a response.

1. The location of the response, meaning which part of the card is used: The whole blot might be used (symbol W), or a large detail of the blot (D), or a very small detail which the average individual would ignore or overlook. At times the white space (or background) becomes of importance and is used as stimulus; this could be considered as a reversal of the usual mechanism.
2. The *determinant*, meaning in what way the response is organized: whether only form elements are considered, whether movements are seen in the cards, and whether elements of color or texture are used.
3. The *content* of the response: whether the subject sees the blot as an animal, a human being, a part of anatomy, or some other object.

After all responses are properly scored, we attempt to evaluate the predominant characteristics in the subject's responses as a whole.

By means of the Rorschach test we expect to analyze the total personality structure. From our daily contacts with an individual we know in what way he reacts to a given situation. But is this reaction a natural expression of this person's basic personality? Is a certain extravert's adjustment genuine or enforced? What is a subject's "personality reserve" and what can we expect in situations different from the ordinary? How much inner tension might pile up behind a front of enforced extraversion or withdrawal from the usual environment?

In the Rorschach test reaction to color in the cards is the most important indicator of emotional life. The penetrating force of the emotions will express itself adequately in the Rorschach test, and we may draw very definite conclusions as to the state of the subject's emotions from smooth adaptability to uncontrolled impulsiveness. It is well known that colors have a definite emotional

appeal. This knowledge is used, for instance, in decorating rooms. It is assumed that a red longitudinal stripe along the wall will speed up production on the assembly line. For our purpose it might be interesting to know that in primitive man and in newborn children the sensitivity for green and blue is reduced, and the color red has a peculiarly strong appeal among such groups. In the Rorschach test the response of certain neurotics to these colors is significantly similar. The more the color element outweighs the form factor, the stronger can we expect emotional reactions to be. Practical experience confirms this. Pure color responses are most frequently found in demented epileptics, in patients with certain organic brain damages, and in schizophrenics — types which are known for their uncontrolled emotional outbursts.

If the form of the blot is used mainly to formulate a response and its color plays only a secondary role, it is probable that the intellectual functions—expressed by the form of the blot—have a satisfactory control over the emotions, expressed by color; in other words the individual attempts to adapt himself emotionally to stimuli offered by his environment.

The greatest percentage of interpretations are based on the shape or form of the ink blot. All other properties of the blot, such as color and shading, are completely disregarded in this type of answer. This response has been found indicative of intellectual control, particularly if the qualities of the blot are good. Normally, 40-50 per cent of all responses are form answers (symbol F). In cases with an F per cent higher than 50 the intellectual control becomes less flexible and rigidity develops. Similarly, the control is loose when the F per cent is very low—20 per cent or less—as it is in some schizophrenics. A great discrepancy in the form quality of the blots within the same test is significant, indicating a schizophrenic thinking disorder.

If an individual adds kinesthetic or movement elements to the form concept we deal with the so-called movement responses. In such a case the individual imagines the object seen in motion. It is important to differentiate whether a human figure, an animal or an inanimate object is seen moving. In order to perceive a human figure in motion certain creative abilities are necessary. Rorschach thought that active individuals striving for recognition see more extensor movements and that in passive personalities with neurotic inhibitions flexor movements are more noticeable. An example of the former would be a dancer erect in passionate whirl; of the latter, an old woman bent by the burden of her years. Neurotic inhibitions, alcoholization, epileptoid tendencies, manic and depressed conditions decrease the free use of creative abilities and thus reduce the number of movement responses (M); the *mature* form of productivity is reduced and movement is projected into more primitive patterns such as animals. Children and neurotics show such an increase of animal movements over human movements. Movement upon inanimate objects expresses tension within the personality development.

Frequently, shading effects are interpreted by maladjusted personalities as clouds of smoke. This state of fogginess—symbolic of the individual's inner life—is a projection of his anxiety. This might be expressed in its primitive form as already mentioned — clouds, smoke—, or it can be sublimated into higher psychological complex performances. In that case it is combined with form elements and the blot is enlivened into a three dimensional picture—for example, a landscape seen from an airplane.

Of equal importance with the single test factors is their relation to each other—as the relation of color to movement. As already mentioned, color indicates emotional expression and movement signifies inner creative ability. Therefore, it is understandable that the more color responses an individual shows the more this individual depends on an emotional relation to his environment. This is the case in the so-called extraverted type. Introverted or introspective personalities depend more on their own creative abilities; we have to expect to find fewer factors expressing emotional feelings among that group. In other words extraverted types find color stimulating: they will show more answers in the color cards and they will have more color than movement responses. Introverts present an opposite relation.

Application

From this comparatively short discussion you will realize the wide application of the Rorschach test. It can be utilized in all fields of normal and abnormal psychology, since it

gives us a complete picture of the individual's personality make-up.

In normal psychology the determination of intelligence is of great importance. The conventional types of intelligence tests in use give us the approximate mental age. By means of the Rorschach test we can not only estimate the mental age but also determine how this intelligence is used: whether the individual is capable of original thought and free creation or is prone to make reproductive use of the ideas of others; whether he is better in detail work or in comprehensive organization of intellectual material. This test will help us in vocational guidance by aiding in the selection of the occupation for which a subject is best fitted.

Of course, the widest application of the test lies in the psychiatric field. It enables us not only to analyze the psychotic personality structure but also to detect early psychotic manifestations, at times even before they become clinically evident. This is of great practical importance in spotting cases of early schizophrenics (particularly dementia praecox) since the modern shock therapies have proven to be three to four times more successful in early cases. Since early psychoses frequently take the form of neurotic symptoms we have to decide whether the picture presented is that of an early schizophrenia or is a true psychoneurosis. The Rorschach test will shorten the time of observation in such cases and will give important hints for further clinical examinations. Great variability in the quality of interpretation within the same test is ominous: as, for instance, keenly perceived forms in the same test with poor responses. The following response, given by a schizophrenic, is illustrative: "The liver of a solid living statesman." If we analyze this response we find a typical schizophrenic symptom—namely, condensation of ideas into the same concept. This blot might be seen as a human figure, which may be associated with the idea of something solid. On the other hand, the same blot might be interpreted as some kind of inner organ, as the liver, for instance. This schizophrenic had both ideas and contaminated one with the other by using both in the same response: "The liver of a solid living statesman."

Another important schizophrenic sign is the use merely of the position of the blot without any consideration of its form or of any of its other qualities. This has probably the same psychogenetic mechanism as the symbolism of the schizophrenic. Of course, there are many other schizophrenic Rorschach signs.

Subjects with neurotic conditions show an increase in the percentage of pure form answers, indicating a rigidity in thinking; a large number of anxiety factors; and a reduction in the reaction to color stimuli. The underlying psychogenetic complex expresses itself at times in unusual original responses to the blot; a mechanism similar to psychoanalytical symbolism might explain this type of reaction. Rorschach writes in his monograph[2]: "the . . . interpretations are symbols corresponding to dream symbols, meaning something different in the unconscious but they indicate the strong affective force of the latent content." This is particularly pronounced in the color responses, but might be applied to the whole test procedure.

Manic and depressive conditions give the test their specific reactions, as do epilepsy and organic brain conditions. Of course, we can not diagnose the exact type of organic brain affection, but the Rorschach test indicates general organic dysfunction of the brain in contrast to psychotic or neurotic conditions.

The value of the Rorschach test in this connection might be illustrated by a case which came to our attention lately. A 19 year old boy was hit by a ladder when he was out with the State Guard fighting fire. A few weeks later he developed signs suggestive of organic damage, such as dizziness, headaches, complaints of misjudging distances, and temporary aphasic disturbances; those symptoms were accompanied by very marked personality changes—increased irritability and impulsiveness, a tendency to depression, and carelessness about his personal appearance. In this case it was very important to decide whether or not those symptoms were a result of the injury received, since the State would be liable for any disability caused by the accident. The Rorschach test revealed a neurosis, in contrast to the first clinical impression. Further elaborate laboratory tests (electroencephalography, pneumoencephalography) and spinal fluid examination excluded organic damage. Additional clinical examination showed finally that the patient had fallen in love shortly before the behavior changes became

noticeable and that his parents opposed the affair. The resulting repression produced deceiving symptoms. The State and the public were saved a substantial amount of money.

In these days of national emergency the Rorschach test deserves a definite place. Highly mechanized warfare makes demands on the individual unknown up to now. Everyone has to be carefully selected for the job he is doing; everyone should be trained for the place he is best fitted for, emotionally and intellectually. Since the Rorschach test has proven an important aid in analyzing the personality as a whole, its use will be of great value in this new field of applied psychology. The European nations have long recognized its value and have been using the test along several lines, chiefly to select proper personnel for specialized purposes and prevent the induction of unfit personalities into military service. This test is of particular value in borderline cases. In such cases only a prolonged and costly period of observation might enable us to weed out the undesirable man. The Rorschach test, in collaboration with the clinical findings, would save a great deal of effort, time and expense. The help in differential diagnosis offered by the test is just as important in military as in civilian psychology, since the consequences are even more far reaching and concern not only the individual but the whole country.

With the present emphasis on air power the selection of potential pilots is of great importance. There are already several other tests in use which give an idea about the reaction time, form perception, and selective ability of the candidate under different psychological and physiological conditions. The Rorschach test will contribute by informing us about the emotional adjustment and impulsiveness of the candidate, about the different factors of intelligence, control, etc. A person subject to anxiety reactions will not be very reliable in the air; and a candidate with marked inhibitions and a rigid personality make-up might be too slow in making decisions, thus endangering himself, others, and valuable material. In the last war over 80 per cent of planes were lost *not* in actual combat and *not* because of failure in construction. This suggests that personnel difficulties were probably the reason. To avoid such high losses in this war we have to make a better selection of pilots. Experience has shown that "isolated measures" to detect "simple abilities are of little help in analyzing the personality as a whole."[4] Many of the personality tests take the form of leading questions, and the candidate knows what is expected from him; in answering the questions he is guided, consciously or unconsciously, by the desire to pass the test. The Rorschach test offers "no artificial personality ideal to which he can attempt an approximation . . . indications of neurotic behavior or emotional instability manifest themselves in ways quite beyond his control and remotest knowledge." The most useful purpose of the test may be the determination "of the degree of emotional reactivity and its control. It is obvious that a pilot must not be overwhelmed by fear or anger in a stressful situation—despite however excellent his somatic and psychological status —he will then be unable to fully use his carefully acquired training and to respond in accordance with it. The same man would have a very high score in a quiet room or in the Link Trainer."[4] According to statistics 90 per cent of the failures to complete courses in military aviation are due to emotional maladjustment.

4. Bigelow, R. B.: The Evaluation of Aptitude for Flight Training: The Rorschach Method as a Possible Aid, J. Aviation Med. 11:202-209 (Dec.) 1940.

Synthetic Rubber. You may well ask the question: Is synthetic rubber equal to the natural? One may say, the synthetic product is at least equivalent to the natural, but as of to-day it does not duplicate it, nor is it essential to duplicate nature's product, for the chemist's goal is to produce rubber with far superior properties to the natural. It has already shown far superior properties from the standpoint of gasoline, oil and chemical resistance. The synthetic product has greater wearing properties, and does not deteriorate readily in sunlight and air.

A number of trucks and motor cars using synthetic rubber have gone over 35,000 miles, and one may reasonably expect at least 100,000 miles with the amount of research going on in the laboratories of the United States. The greater general strength of a synthetic tire means less driving hazards and better road gripping. The latter property has been thoroughly tested on wet and muddy roads. Hill tests made with a number of trucks on a muddy road showed that the synthetic-tired vehicle had very little side-slipping, while the natural-tired vehicle slipped all over the road. Taxicab drivers advise that they all feel far safer in driving in mud or on wet city streets when their cabs are tired with synthetic rubber.—Dr. Gustav Egloff: Peacetime Values From a War Technology, Science 97:106 (Jan. 29) 1943.

NICOTINIC ACID (NIACIN) IN THE TREATMENT OF VINCENT'S INFECTION

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In the *Lancet* for July 13, 1940, J. D. King[1] reported the successful treatment of 4 cases of Vincent's disease by nicotinic acid —recently renamed "niacin" by the Council on Foods and Nutrition. King based his treatment upon the observation that mouth lesions yielding the organisms found in Vincent's infections were common in pellagra, and that they cleared up promptly under nicotinic acid. He reasoned that Vincent's disease was either an early manifestation of pellagra or was due to a vitamin deficiency. While his theory is open to question, his results are convincing.

For more than a year I have been using, with great satisfaction, niacin in the treatment of Vincent's infections of the gums and throat. The dose I usually employ, which is smaller than King's, is, for adults, 25 to 50 mg. three times a day; for children, 10 mg. or more according to age. The most spectacular results have been in the acute cases. A typical case report is that of a 17 year old girl who had ulcers on her pharynx (the tonsils had been removed), enlarged cervical lymph nodes, and a temperature of 103 F. A smear showed numerous Vincent's organisms. Niacin, 25 mg. three times a day, was prescribed. Within forty-eight hours the temperature was normal and the ulcers had almost disappeared. A smear taken on the fifth day was negative.

Several dentists who have tried this treatment have found it effective. Dr. R. E. Spoon of Winston-Salem has found it most useful in the acute cases of gum involvement, but also helpful in chronic cases in conjunction with local treatment. He has observed that its use keeps the mouth cleaner, and apparently greatly retards tartar formation. In pyorrhea he has found it of decided benefit, even when Vincent's organisms are not present. In at least one case he thinks it enabled him to save the patient's teeth.

Incidentally, Dr. Spoon and other dentists have found Vincent's infections much more prevalent in summer than in winter. The explanation may be found in the increased consumption of soda fountain drinks, which only too often are served in unsterilized glasses. It is interesting that Black[2] has recently demonstrated to his own satisfaction that Vincent's stomatitis is caused by herpes simplex—the ordinary fever blister. As a clinching argument he cites the fact that both Vincent's disease and herpes are more prevalent in the summer months. More recently another writer has argued that Vincent's stomatitis is not due to any organism, but solely to a vitamin deficiency. The object of this brief paper, however, is "not to reason why", but merely to say that niacin is usually effective in the treatment of Vincent's infections.

Read before the Section on the Practice of Medicine, Medical Society of the State of North Carolina, Charlotte, May 12, 1942.

1. King, J. D.: Vincent's Disease Treated With Nicotinic Acid, Lancet, 2:32-35 (July 13) 1940.

2. Black, W. C.: The Etiology of Acute Infectious Gingivostomatitis (Vincent's Stomatitis), J. Pediat. 20:145-160 (Feb.) 1942.

ASHEVILLE-BUNCOMBE COUNTY GONORRHEAL CLINIC FOR WOMEN

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ASHEVILLE

Gonorrhea is not a new venereal disease, but we have been so much concerned with syphilis that it has not received the attention it should have. Gonorrhea is said to be the most common communicable disease next to measles, and we must know how to diagnose and treat it if we are to control it.

Although the diagnosis and treatment of gonorrhea in women are different from those of the same disease in men, the fundamental principles are the same. We must have a knowledge of the selective living habits of the gonococcus and the manner in which it causes the disease by penetrating the surface of mucous membrane lined only by columnar epithelium. If the gonococcus does not get into the submucosa, there will be no disease. It does not live on the surface. This is the key whereby we must unlock the door to our diagnostic procedures. We must know not only the anatomical structure of the female, but the histological structure of the various mucous membranes, so that we may determine where to search for the gonococcus.

Gonorrhea in the male is an important

and painful disease, but in women the results may be far more tragic. If it spreads beyond the internal cervical os, causing salpingitis and peritonitis, gynecological surgery is often the only way to save the patient from complete invalidism. Although the area of mucous membrane which may be infected in women is much greater than that in men, the signs of onset of the disease may be very indefinite and the symptoms of its progress obscured. Unless the disease has gone beyond the natural barrier. the internal os, women are frequently unaware of their infection.

The combined Asheville and Buncombe County Venereal Disease Central Clinic has, since its start, treated gonorrhea; but not until the last of December, 1941, was a separate clinic for women set up. I am going to picture for you this clinic in action, not because it is unusual, but because I believe it is well planned and efficient. Our equipment is all necessary and well placed in order to save steps. Each member of the clinic staff knows her duties and performs them. This makes it possible to examine carefully as many as forty-three women in one evening's clinic.

Our gonorrheal clinic for women is held each Friday, starting at 6:30 p. m.. The attendance at each clinic varies from twenty-five to forty-three. It is staffed by a medical woman, three public health nurses, and a technician. One of the nurses interviews all new cases. One gets the patients into the room, on the examining table, and draped; labels smears; finds patients' records; cleans and sterilizes the instruments; and gives out medicine, when instructed to do so. The other nurse waits on the physician. The technician takes the doctor's dictation, given as each patient is examined and written at once on the record card. and plants the gonorrheal cultures immediately on chocolate agar media. The use of two examining tables makes it possible for the examinations to proceed with no loss of time.

The mode of procedure in a new patient is to inspect thoroughly the labia and vulva for any signs of a genital lesion. The index finger is then inserted in the vagina and pressure is made on the urethra to milk out any material which may be present in Skene's glands. A smear and culture are made from this. Next a speculum is placed in the vagina and careful inspection is made of the cervix, for 60 per cent of primary syphilitic lesions are here. The outside of the cervix is cleaned off with a cotton swab if much discharge is present. Then the mucous plug so often present in the cervix is expressed by slight pressure with the blades of the speculum. Following this a swab is inserted just inside the cervical canal and another smear and culture are made. Only one slide and one Petri dish are used for each patient. The speculum is removed and a bimanual examination is made. The examiner then classifies the case clinically as negative, doubtful or positive.

Treatment is started immediately if the diagnosis is positive; otherwise, the laboratory makes the decision. Our plan of treatment is the same as that used in many other clinics. The patient is given sulfathiazole tablets with directions to take two tablets after each meal and before retiring for five days. This treatment may be repeated or the tablets may be reduced to one four times a day. If there is a copious discharge, douches are prescribed: potassium permanganate, one tablet to one quart of water at night for mechanical cleansing. The patient returns each week for three weeks and then each month for three months, provided smears and cultures remain negative and clinical conditions are satisfactory. Then she is discharged. Serological tests are made just before discharge.

We are examining all women who are put in our jail. If they have any venereal disease they are treated for it and are rendered non-infectious before they are released.

Our clinic attendance is excellent, and I believe this is due to the fact that our attitude toward our patients is sympathetic. The purpose of the clinic is to treat this communicable disease. The source or contacts will be treated in our men's gonorrheal clinic if the women will give us this information. Instructions regarding the details of treatment and the precautions which must be taken is given by the nurse interviewer as this requires privacy and more time than can be given the patient in the examining room.

A statistical resume of the findings of the clinic follows:

January 1 — July 31, 1942

Patients examined	214
Patients with gonorrhea	138
Patients with both syphilis and gonorrhea	34

Patients with trichomoniasis	3
Clinically negative	75
Clinically positive	119
Clinically doubtful	20
Smears	
positive	46
negative	168
Cultures	
positive	58
negative	156

It is gratifying that more women are seeking our aid in diagnosis and treatment. The January (1942) report from the Central Tabulating Unit in Raleigh showed 10 new cases of gonorrhea in women treated in our clinic, with a total of 16 active cases for the month. In June 21 new cases were reported and 71 active cases received treatment during the month. This gives an idea of the growth of the clinic.

Summary

A knowledge of both the anatomical and the histological structure of women and of the living habits of the gonococcus is necessary to diagnose gonorrhea. A doctor with a large, dry cotton swab, diligently mopping off the outside of a swollen urethra or making a tour of the vagina with a similar instrument and then expecting a laboratory to find gonococci in a smear or culture made in this manner is, indeed, an ignorant optimist.

A gonorrheal clinic for women has been described in detail, with a statistical resume of the findings for the first six months. The growth of the clinic during six months is indicative of the need for it, and the regular attendance of most patients makes us feel that the personnel has the right manner and attitude in handling patients.

Cause of Recurrent Peptic Ulcer.—In their paper dealing with 1500 cases of recurrent peptic ulcer, Brown and Dolkart (J.A.M.A. 113:276, July, 1939) concluded that "functional nervousness including fatigue and anxiety, was by far the greatest detectable cause of recurrence," and in many cases that the same causes might be responsible for the original ulcer. They say, "treat first the patient, second the bowel, and last the ulcer." Certainly most physicians agree with these conclusions. Too often, however, we have not recognized the role played by fatigue in the persistence of pylorospasm, to take one complication, in the presence of ulcer. Frightened by nasal tubes and other paraphernalia in hospital, without being given an opportunity to understand the role played by fear in producing gastric retention, the result may lead to gastric resection instead of alleviation through relatively simple procedures dealing with man's understanding of man. —Arlie V. Bock: Fatigue, Tr. and Studies Coll. Physicians Philadelphia 10:79 (June) 1942.

THE SIGNIFICANCE OF THE NASOPHARYNX

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The nasopharynx is the top part of the throat; it is anterior to the first vertebra and is a part of the base of the occipital bone, posterior to the nose, below the body of the sphenoid bone; it extends down to the level of the palate.

The pharynx is a tube to conduct air and food. The nasopharynx conducts air, but it has muscles essential for swallowing. There are the three lifting muscles: the pharyngopalatinus, the stylopharyngeus and the salpingopharyngeus. These muscles are inserted in the region of the thyroid cartilage and elevate the pharynx in the first act of swallowing. The constrictor muscles of the pharynx force the food down the throat, and the superior constrictor is located in the nasopharynx. Overlying these muscles is a mucous membrane, containing mostly ciliated squamous epithelium with many goblet cells and some racemose mucous glands. Within the deeper structure of the mucosa are found many lymphoid masses which drain into the deep cervical glands.

In the nasopharynx we find a few very important structures. The nasopharynx is small, so that it is possible to visualize each of these parts. Unfortunately, although this is one of the few areas of the human body that can be seen in its entirety, it is almost universally neglected. The nasopharyngoscope gives perfect visualization of this organ, and, when necessary, can be used on nearly all patients (the very young being excepted). Those in which this instrument cannot be passed usually have a badly formed nasal septum; in these one could easily begin proper treatment with a submucous resection. Mirror examination should be done when possible, but the gag reflex does not permit this to be done routinely. The finger could also be used, but is not a satisfactory method because of its discomfort and because one must do much of the examination with the finger nail.

In examining the nasopharynx one should look for: (1) the posterior choanae, or open-

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ings of the nasal fossae into the area; (2) the adenoids, an abundant mass of lymphoid tissue; (3) the pharyngeal bursa (if this is present it is usually found in adults and is located in the center of the adenoid area; it is probably caused by a cicatrization of the superficial lymphoid tissue with an accompanying degeneration of the deeper mucous glands; it results usually in a draining mucous cyst, often infected, and producing a postnasal drip); (4) Rosenmueller's fossa, a recess lateral and above the eustachian tube orifice (this could contain mucopus and other accumulations as well as adenoid tissue); (5) the Eustachian tubes; and (6) the lateral lymphoid folds, a collection of lymphoid ridges extending down the pharynx, behind the tonsils.

Each of these areas is significant. The posterior choanae may be occluded by polyps, fibromas, or hypertrophy of the posterior tips of the inferior turbinates. If these conditions are present, they can be corrected. Pathological conditions in this area cause nasal obstruction, with the consequent sinus and middle ear complications.

Adenoids are usually found in children, but may be present at any age. The largest mass I have ever seen was in a woman 53 years of age. The masses vary in size and location. They must be visualized before operation whenever possible. It seems to me that the removal of adenoids is usually carried out with the poorest technique of any operation I know of. In examinations of children who have had previous tonsillectomies and adenoidectomies, I frequently find excess adenoid tissue causing trouble. On reporting this, I am embarrassed by the mother's asking why the doctor did not remove the adenoids at the previous operation. My answer must be that I do not know whether there is a secondary growth or an incomplete removal. Thus far, in my own cases, adenoids that are still present following operation are the result of incomplete removal. For these cases I advise irradiation immediately, and the results are usually good. I have found the baby curette a valuable aid in my operative technique. It is so small that it will fit well into any area of the nasopharynx.

Adenoids are a frequent source of trouble. They cause nasal obstruction; they are often a factor in postnasal drainage; they play havoc with the middle ear; and when present in adults they may be a focus of infection producing systemic symptoms. Adenoids can be removed easily under general anesthesia, or under local anesthesia injected through the curved tonsillar needle. Patients report that the operation under local anesthesia is not painful. In operating I always have the patient's head well back and use the suction machine.

The pharyngeal bursa, also known as Thornwaldt's disease or Thornwaldt's bursa, is not a true bursa. There are various theories as to the origin of this structure. Regardless of its etiology, however, the mass can be removed as though it were adenoids.

Rosenmueller's fossa is a normal recess. If the recess is partly occluded, infected or invaded by lymphoid tissue, this condition can be corrected with the curette.

The openings of the eustachian tubes must be unobstructed. If they are bathed in mucopus or are in contact with adenoid tissue, there will be middle ear disease. This may mean loss of hearing or possibly mastoiditis. Adenoids must be removed. On one occasion a 9 months old baby was brought to me with a suppurative otitis media of seven months' duration; local treatment by several physicians had not helped. I thought a mastoidectomy would probably be necessary, but I was delighted to find that a simple adenoidectomy produced a dry ear in forty-eight hours. One should examine carefully the lymphoid tissue about the tube; sometimes it is located in the tube and this may require irradiation. The effects of irradiation should always be followed up.

Lateral lymphoid folds may be partially removed surgically or by irradiation or by both methods. In my experience this area of the nasopharynx causes little trouble, if the other regions are normal.

Just before writing this paper I reviewed my last 50 tonsillectomies in adults. Of these 50 patients 13 had adenoids. There were 24 patients in the age group 15-25, and 10 of these had adenoids. In the age group 25-35 there were 15 patients, 2 with adenoids. In the age group 35-55, there were 11 patients, 1 with adenoids.

Adenoids can be present at any age, and may cause much trouble. I make a plea for the simple examination of the nasopharynx. The entire area can be visualized. The correction of the defects found will do much to eliminate respiratory infections and

middle ear disease, which is often accompanied by loss of hearing. Rather frequently a focus of infection may be found and occasionally, though not often, a routine examination will reveal a carcinoma, previously quiet, but deadly in its uninterrupted growth.

CEREBRAL PALSY AND THE PEDIATRICIAN

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and
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Early Symptoms, Diagnosis and Etiology

In most instances the early diagnosis of cerebral palsy is the responsibility of the pediatrician. Much has been learned concerning the central nervous system lesions which produce the motor disturbances of cerebral palsy.

Cerebral palsies due to birth injuries should be differentiated from congenital cerebral palsies if possible. Birth injuries tend to affect some parts of the body more than others, whereas in congenital cerebral palsy the motor condition is more regularly distributed throughout the affected child. The abnormality here is thought to be present in the germ plasm during the process of development.

There is no agreement as to the anatomical residua of cerebral birth injuries if the child survives. From the studies of Capon[1] one concludes that the hemorrhage occurs almost always in the meninges rather than in the substance of the brain. The brain, however, may be injured as a result of compression by a large hematoma. If the bleeding is in the cristae at the base, the blood usually is diffused throughout the subarachnoid spaces without local injury; but if the hemorrhage occurs at the vertex where the sulci are restricted, compression and softening of the cortex is not common. Blood in the subdural space is not easily absorbed, but in the subarachnoid space there is greater opportunity for its absorption.

From the Cerebral Palsy Unit, Divisions of Orthopedics and Pediatrics, Duke Hospital, Durham.

1. Capon, N. B.: Intracranial Traumata in the New Born, J. Obst. and Gynec. British Empire 29:572-590, 1922.

Studies made by Fleming[2] and Roberts[3] show that less than 15 per cent of the infants with definite signs of cerebral birth injury live, and that those who survive are apt to be defective in later life. When the spinal puncture discloses blood-stained fluid, but clinical signs of birth trauma are absent, the prognosis is apparently good.

Early clinical signs of cerebral birth injury are important. If the injury has caused large intracranial hemorrhages, the child is likely to be stillborn. If less severe injuries are present, the child may be born alive but deeply asphyxiated. In most cases signs of intracranial hemorrhage appear within a day or so after birth, but they may be delayed until after the first week. In pallid asphyxia which occurs immediately after brith, the baby is pale rather than blue. There may be flaccidity rather than spasticity. Frequently it is impossible to induce respiration, or respirations when finally initiated may be feeble, shallow and intermittent. The fontanels are soft. Crothers[4] believes that pallid asphyxia indicates hemorrhage into the posterior fossa with injury of the medulla. Munro[5] regards it as surgical shock. Both these factors undoubtedly play important roles.

The most common clinical picture is one of recurrent cyanosis (case 5). Respiration is disturbed, being slow or irregular. When artificial oxygen is supplied, periods of apnea may occur (case 9) and the lungs may not expand properly. The child cries feebly or not at all. In most cases the child is rigid, especially on one side. The head is usually retracted and the hands clenched. An apathetic or stuporous condition exists. Local twitching of muscles occurs commonly and may persist for hours in irregular form. The fontanels are usually bulging and tense from intracranial pressure. The spinal fluid findings may be most revealing. If the blood has been in the subarachnoid space for some time, the following changes occur:

a. Supernatant fluid after centrifugation will be yellow or orange and will give positive benzidine tests.

2. Fleming, G. B.: Paper on Recognition and Treatment of Birth Injuries in Newly Born, Brit. M. J. 2:481-485 (Sept. 12) 1931.
3. Roberts, M. H.: The Spinal Fluid in the New-Born; with Especial Reference to Intracranial Hemorrhage, J. A. M. A. 85:500-503 (Aug. 15) 1925.
4. Crothers, B.: Changes of Pressure Inside the Fetal Craniovertebral Cavity, Surg., Gynec. and Obst. 37:790-801 (Dec.) 1923.
5. Munro, D.: Cranial and Intracranial Damages in the New Born, End Results. Study of 117 Cases, South. Surg. Tr. 40:393, 1927.

Labor	*Early Symptoms*	*Diagnosis*	*Etiology*
Case 1. 13 hours. Head presentation, low forceps.	Deficient animation, difficulty in swallowing, exaggerated reflexes of right extremities.	Right hemiplegia	Probable birth injury
Case 2. 7 months pregnancy, breech presentation. Laceration of the sacro-coccygeal area which healed.	First seen at 15 months. Muscular tension, restlessness, general rigidity. Some exaggerated reflexes, with overflow present in the legs. Irregular temperature.	Spastic paraplegia. Fair prognosis.	Congenital
Case 3. Foot presentation. Mother had convulsions a few hours before and after delivery.	Sluggishness, restlessness, with rigidity. Muscular twitchings at 6 months. Difficulty in nursing. Marked paralysis in arms, neck, tongue.	Severe athetosis in arms and neck. Fair prognosis.	Birth injury.
Case 4. 15 hours.	Periods of stiffness at 3 months. At 5 months slow in physical development. Hyperactive in all reflexes. Developed respiratory infection.	Spastic quadriplegia.	Congenital.
Case 5. 7 months pregnancy, 2 hours labor.	Weakness, cyanosis, rigidity, difficulty in swallowing at birth. Convulsion at 4 years. General tendency to diseases. Reflexes of lower torso hyperactive.	Congenital spastic diplegia. Fair prognosis.	Congenital.
Case 6. 36 hours labor, instruments used.	Deficient animation, difficulty in swallowing.	Tension tremor.	Unknown.
Case 7. 18 hours. Head presentation, baby hurt about face and neck with forceps.	Could not swallow, artificial respiration for 20 minutes, did not cry for 3 weeks. Local paralysis in face. Convulsions soon after birth, 15 minutes apart for 24 hours.	Mild athetosis. Good prognosis.	Birth injury.
Case 8. 8 hours. No instruments used. 8 months pregnancy.	Convulsions about once a month at age of 2. Right side rigid, general paralysis on left side.	Tension tremor, mental retardation.	Questionable.
Case 9. 8½ months pregnancy. 20 hours labor, head presentation.	Artificial respiration and oxygen tent used. Restlessness, difficulty in swallowing, reflexes normal, poor coordination. Tight heel cords.	Primary incoordination.	Anoxemia.

b. Red cells will be crenated.
c. An excess of white cells, including phagocytes containing hemoglobin, will be found.
d. Fluid is uniformly bloody and does not clear with continued flow.

If all these tests are negative, and blood has appeared in the spinal fluid, it is due to trauma from the needle with which the spinal puncture was made.

Altered blood in the spinal fluid is diagnostic. However, absence of blood in the spinal fluid may be due to the fact that the blood has failed to reach the subarachnoid spaces. If practical it is best to wait several days after birth before making the spinal puncture.

In the infant, the manifestations of congenital cerebral palsy are similar to those of cerebral palsy due to birth injury. There is cyanosis, inability to take the breast, feeble cry, and either rigidity or flaccidity. However, in congenital palsy there is no evidence of increased intracranial pressure, such as bulging of the fontanels or changes in the eye grounds, and the spinal fluid is usually normal. Congenital cerebral palsy is usually of a structural nature, and there are other associated malformations (cases 2 and 5). The true etiology is revealed only through postmortem examination. Serious lesions of the brain which were not suspected during life have sometimes been found at autopsy.

Ford[6] states that the cerebrums of patients suffering from congenital cerebral palsy fall into three principal groups:

a. Those which show evidence of a diffuse degenerative process or atrophic lobar sclerosis.
b. Those which show gross malformation or defects of development.
c. Those which are normal in appearance, but show defects of development on microscopic examination.

Ford has found many defects of development which he has termed atrophic lobar sclerosis. He is of the opinion that this condition is the result of a toxic or degenerative process occurring *in utero*, and that malformation defects are associated with morbid inheritance. There also may be an interference with oxygenation of the fetus, and this may play a part in the defects of development. The exact etiology is not always determined. However, if the motor manifestation —be it athetosis, spasticity, or flaccidity—is more or less symmetrical, the condition undoubtedly started *in utero*.

Temperature regulation is unstable (case 2). In the congenital defectives fever often develops without any apparent cause, but this happens only rarely in cases due to birth injuries. There is little resistance to infec-

6. Ford, Frank R.: Diseases of the Nervous System in Childhood and Adolescence, Springfield, Ill.: Chas. C. Thomas, 1937.

tion and many of these infants die from childhood diseases. These children are very sensitive to drugs, especially atropine. There is a marked difference between congenitally defective patients and those with birth injuries, both in general development and in reaction to environment. Damage due to birth injury is not progressive. If the child survives the acute stage, there may be continued clinical improvement. The congenitally defective patient, however, has a faulty organism. This fact has been observed repeatedly in the Cerebral Palsy Unit of Duke Hospital.

Care of the Mother

The profound effect on the infant of the mother's diet during pregnancy has been demonstrated in laboratory animals as well as in humans beings, and is well recognized[7]. Vitamin K was first used experimentally to prevent a hemorrhagic disease of chicks. In this disease, which is characterized by low prothrombin values and marked delay in the clotting of the blood, the addition of vitamin K to the diet increased blood prothrombin to the normal level. Vitamin K has also been found essential for normal prothrombin in man. By administration of vitamin K to the mother before parturition, the usual decrease of prothrombin will be prevented. Vitamin K should be administered to all mothers, but especially in cases of toxemias, difficult or instrumental delivery, or premature labor[8]. It should also be given to all infants with hemorrhagic disease of the new born, intracranial hemorrhage, and icterus gravis, all of which may be associated with cerebral palsy.

Care of the Child

One of the most important symptoms of lack of development of an upper neuron is the failure of the infant to take the mother's breast. This brings forth mechanical and dietary problems from the beginning.

As is pointed out in the following case reports, muscular activity and reflex responses are irregular. The sucking and swallowing reflexes are inactive either from hypertension of certain muscle groups or from flaccidity if the infant is not full term. Since respiratory centers fail to act normally, respiration may be interrupted by long periods of apnea. These periods often last long enough to cause fatal asphyxia. In birth injury it is in all probability the hemorrhage which causes the apnea; in congenital cases it is the undeveloped nervous system. Along with mechanical irregularity there is a marked tendency to temperature changes, sensitivity to drugs, and sensory changes. Case 2 shows many of these irregularities.

When the infant refuses to take the breast, mechanical difficulty is usually encountered with the bottle also. Feeding by tube or medicine dropper is commonly used until the bottle can be given. Many children with cerebral palsy are still taking liquids from a bottle at the age of 6 years, but they can learn to take food from a spoon when the reflex activity is such that they can use the nipple of a bottle. The nutritional requirements of an infant with cerebral palsy are similar to those of a normal infant.

Nine-tenths of the histories of infants with cerebral palsies record feeding difficulties. In our opinion, diet is foremost in the proper management of each cerebral palsy case. An early deficiency can never quite be compensated for, and it is therefore important to overcome the mechanical feeding difficulty. Proper rest periods must be encouraged.

The majority of the children in our clinic show signs of malnutrition at the beginning of muscle training. The general musculature is poorly developed. In a few months, however, with a balanced diet and muscle training, the muscles develop a contour suitable to the child's age. This change cannot be attributed wholly to muscle training, but partly to diet and rest as well. We find that the athetoid group consumes two-thirds more calories than the spastic group. In these two groups, certain vitamins have played an outstanding role. Our observations have been made on approximately 300 patients who have been under our care since the cerebral palsy unit of Duke Hospital opened.

Vitamin Therapy

A group of 15 cerebral palsy patients under our care were given a course of treatment with vitamin A in the fall of 1938 by

7. Rose, Mary S.: Care of the Mother, in The Foundations of Nutrition, ed. 3, New York: The Macmillan Company, 1938.
8. (a) Huber, C. P. and Shrader, J. C.: Blood Prothrombin Levels in the New Born, Am. J. Obst. & Gynec. 41:566-574 (April) 1941.
   (b) Javert, C. T. and Moore, R. K.: Prothrombin Concentration in Parturient Women and Their Newborn Infants, Am. J. Obst. & Gynec. 40:1022-1025 (Dec.) 1940.

Drs. Arena and Dann[9]. The patients in this group fell into two classes: (1) those with "spasticity", where there is pyramidal cell involvement; and (2) those with athetosis, where the basal ganglia system of cells is involved with the organic lesion. A control group of patients with the same type of disorders received the same physical care, training, and diet, except for the excess of vitamin A given to the experimental group.

Originally it was planned to give each patient weekly 100,000 U.S.P. units of vitamin A intramuscularly. The source of vitamin A was a fish liver oil concentrate containing very little vitamin D. After the second weekly injection of the material (into the buttocks) there was evidence of an unfavorable reaction in some of the patients to this form of treatment, and thereafter the same concentrate was administered orally, the dose being fixed at 50,000 U.S.P. units daily to allow for the possibility of poor absorption from the intestine. Thus the total treatment for each patient, beginning the first week of October, included two injections totalling 200,000 units of vitamin A, followed by the oral administration of 50,000 units daily from the middle of October until the middle of December — approximately an eight-week period.

In the athetoid group, where the basal ganglia cells are involved, the athetoid spasm was less frequent in the patients treated with vitamin A than in the controls not treated. Caloric intake was not as great in the patients treated with vitamin A. No obvious differences were noted between the control and experimental groups of spastic patients.

Vitamin therapy probably lessens muscle contraction in the patients with muscular hypertension, whether it be due to athetosis or spasticity. The children's growth and development, along with their increased resistance to infection, is largely due to vitamin therapy along with a diet which is worked out for each child and based upon caloric needs per pound of body weight.

9. Arena and Dann: Unpublished data on the use of vitamin A with cerebral palsy cases.

Pancreatic Cancer.—The association of loss of weight and abdominal pain with negative physical and gastrointestinal x-ray findings should always suggest the possibility of pancreatic cancer. In many of the cases the mistaken diagnosis of neurosis is made.—Joseph H. Pratt: Pancreatic Disease, J.A. M.A. 120:181 (Sept. 19) 1942.

HISTORY OF CHINESE MEDICINE

C. PARDUE BUNCH, M. D.
STURGILLS

To understand Chinese medicine it is necessary to know the fundamentals of the Chinese theory of cosmogony, for the one universal cause of disease was disharmony of the *Yang* and *Yin*. "In the beginning there was chaos, Absolute Void. Out of it, as time took shape, there was evolved the Great Absolute. Therein is combined the double basis of metaphysical and of material being. In its creative aspect, the Great Absolute is a metaphysical principle, the Way of Life, the 'Tao' from which all ideas within the universe arise. In its material aspect it is primordial matter, out of which the whole material universe was fashioned. Gradually, as Primal Matter evolved, it divided into two parts. These are the two cosmic forces, *Yin I* and *Yang I*, the negative and the positive principles of the universe. The grosser and heavier part, *Yin*, was precipitated and became earth. The finer, lighter part, *Yang*, became sublimated and formed heaven. These two, *Yin* and *Yang*, are the two regulative forces that form by their union and interaction, both the soul and the material basis of the universe. *Yin I* is the passive or female element typifying, in general, the weaker phenomena of nature—cold, darkness, disease, death. *Yang I* is the active or male element, representative of warmth and light, of strength and health and life . . . By their harmony or disharmony all creation continues ordered or disordered . . . (They generate) the Five Elements, Metal, Wood, Water, Fire, Earth, from which all created things arise."[1]

The following quotation from Wong's *History of Chinese Medicine*[2] illustrates a part of the relation of these principles to medicine: "A *Yang* pulse is strong, bounding and large in volume while a *Yin* pulse is weak and of low tension. When the *Yin* predominates one suffers from a *Yang* disease; when the *Yang* is in excess, a *Yin* disease results. Excessive *Yang* causes fever, excessive *Yin* causes chills. Even drugs have this distinction. Stimulants, resolvents, expectorants, pungent substances and hot decoctions are

1. Hume, Edward H.: The Chinese Way in Medicine, Baltimore, Johns Hopkins Press, 1941.
2. Wong, K. Chimin and Wu Lien-te: History of Chinese Medicine, Shanghai, National Quarantine Service, 1939.

Yang drugs. Astringents, purgatives, haematics, bitter substances and cold infusions are *Yin* drugs. . . . The Five Elements have special relation to five organs as follows: Fire— heart, Wood—liver, Earth— spleen, Metal—lungs, and Water—kidneys." Thus, in diagnosis, treatment, prescribing drugs and even prognosis the two principles and the five elements had to be given serious consideration.

Chinese Medicine in Ancient Times (Legendary Period Before 1122 B. C.)

Just how far back into antiquity the beginnings of Chinese medicine go it is impossible to say. The general nature of the primitive medical practices can be judged from references to them in later writings. Morse[3] describes three stages through which Chinese medical practices evolved before they became crystallized during the period recorded by history:

1. Instinctive and animistic reactions which are probably common to all humanity.

2. Metaphysical reasoning, which included alchemy, astrology and magic, and is also widespread through the human race.

3. A philosophical basis which had a veneer of both genuine and superstitious religious practices.

The early Chinese thought of the sun, moon and other elements of nature as outward manifestations of gods, demons, devils and spirits, and health and disease were thought to be controlled by them. Diseases were regarded as the work of devils in temporary possession of the body, which could be cured of its infirmity only when the intruders were evicted by the application of appropriate incantations, charms, and other superstitious practices[2].

During ancient times there developed the use of certain drugs, largely of herb origin, in contrast to the medicines of animal origin that came into use in the Chou period (1050-221 B. C.). The medical profession was under the control of sorcerers called "Wu I" (priest-doctor). In historical times this character was altered by substituting the symbol for "wine" in place of the one for "priest", indicating a separation of medical practice from the priesthood and the use of elixirs as medicine[2].

There are three legendary "gods of medicine" who belong to this period. *Fu Hsi*, the first emperor, among many other traditional contributions to his people, gave to them the "Pa Kua" or "Eight Trigrams", said to have been revealed to him while riding on a supernatural dragon-horse. To this ruler, the Chinese attribute priority as a builder of tribal social life, within which medicine was an essential element. *Shen Neng*, the blazing emperor, is a legendary figure to whom the "Pen Ts'ao" or "Great Herbal" is attributed[4]. He is said to have had a transparent stomach so that he could watch the action of drugs that he had eaten. *Huang Ti*, the yellow emperor, is said to have written the "Nei Ching", a classic on Internal Medicine.

Even in these early times doctors had begun to specialize. The story is told of an "external complaint" doctor who treated a man with an arrow in his head by breaking the arrow off and applying a plaster, saying, "The external doctor does not concern himself with internal complaints."[3] Two outstanding practitioners of this period should be mentioned. *Yu Fu* was noted as a surgeon who cut open the skin, dissected out the muscles and even washed the stomach and cleansed the intestines. *Ma Shin-Huang* was a famous veterinarian who was said to have cured a dragon's illness and was carried off to immortality by the dragons in gratitude.

Chinese Medicine in the Historical Period (1122 B. C.-961 A. D.)

This is known as the "Golden" period, and the zenith of Chinese medicine was reached during the Han and T'ang times (206 B. C.-907 A. D.). Creel refers to the position of the physician in the Chou dynasty (1050-221 B. C.) as follows: "There were others whom we cannot class as government officials nor yet as artisans in the ordinary sense. Physicians are such a group. There were apparently a good many of them, with not a little medical theory. It was complicated by much admixture of religious and metaphysical ideas, but food and stagnant water were recognized as sources of disease and even epidemics."[5] Hospitals and medical schools were established; anesthesia, enemas, prescriptions and major surgery made their appearance. Those favorite Chinese treat-

3. Morse, William R.: Chinese Medicine, New York, Paul B. Hoeber, Inc., 1934.

4. Flint, James M.: Chinese Medicine, Smithsonian Miscellaneous Report, Vol. 45, Washington, D. C., Smithsonian Institute, 1903.

5. Creel, Herrlee G.: The Birth of China, New York, Reynal and Hitchcock, 1937.

ments of massage, acupuncture (needling), and moxa (burning mugwort on the skin to raise a blister) reached their heyday.

It is of interest that two of China's more unorthodox rulers made contributions to medicine: The Emperor *Ch'in Shih Huang Ti* in a negative way by sparing the medical, astrological and agricultural books from being burned; and *Wang Mang*, at the beginning of the Christian era, by ordering the court physicians to measure the human viscera. The search for the "elixir of life" continued, and cypress and pine seeds, resins, mushrooms, cinnabar, gold, silver, jade and talc were used in the favorite potions. Smallpox was introduced into China during this period. During the Chou period Chinese medicine attained a high degree of development in matters of medical organization, hygiene and public health. The Chou rituals distinguished four kinds of doctors: physicians, surgeons, dietitians and veterinary surgeons[2]. *Pien Ch'iao* lived in the fifth century B. C. and was said to have originated anesthesia.

During the Han period (206 B. C.-220 A. D.), medical writings were less philosophical and diseases were studied more from a clinical standpoint, with emphasis on the physical signs, symptoms and course of the illness. The great trio of Han physicians were *Ts'ang, Chang* and *Hua*. *Ts'ang Kung* was the first to keep regular case histories of his patients, a practice that was not continued after Han times. *Chang Chung-ching*, the Hippocrates of China, is best known for his "Shang Han Lun", or "Essay on Typhoid". *Hua T'o* attained fame as a surgeon and is now known as the "god of surgery". Native Chinese surgery came to an end with his death. The first woman doctor lived at this time and was recorded as having treated a Han queen. *Wang Shu-ho's* "Mo Ching" or "Pulse Classic" has made him famous as the originator of an extensive lore on this subject. Native practitioners even up to modern times put more stress on the various methods of taking the pulse than on all the other diagnostic techniques combined. Breathing exercises gained a prominent place in the treatment of many disorders.

The medical tradition of the Han regime continued into the T'ang Dynasty (618-907 A.D.). The most famous doctor of this period was *Sun Szu-mo*, whose "Thousand Golden Remedies" in thirty volumes is still used today. He is also credited with having written "Yin Hsi Ching Wei" or "Diseases of the Eye". *Lu Tung-pin* is known as the Taoist Aesculapius. He is said to have attained immortality at the age of 50, and he became a popular god of medicine.

Chinese Medicine in the Medieval or Controversial Period (961-1800)

During this period the decline of medicine with relation to other phases of China's culture and with relation to western medicine began. Its outstanding features were its intensive specialism and the many monographs on particular diseases that appeared. *Ch'ien I* wrote on children's diseases and cured a case of hydrophobia. *Chen Tzu-ming* wrote the first book on women's diseases, in the thirteenth century. A work on beriberi and an imperial Materia Medica appeared during the Sung Dynasty. *Ch'en Yen* was a noted pathologist. Inoculation against smallpox was begun, and though the method was more drastic it was as effective as Jenner's method which was not to come until centuries later. An imperial medical college was founded and state medical examinations were held.

This is known as the "Controversial Period" because the divisions among doctors went beyond specialties and split them into groups with differing views of the causation of disease. In the Chin-Yuan period (1127-1368) there were four groups, contending that disease was due to "too much heat", "foreign substances", "spleen and stomach excess", or "malnutrition". In the Ming period (1386-1644) there were five sects: the "Yang Yin" who believed Yin was more important in medicine; the "Wen Pu" who were ardent for *Yang's* preeminence; the "Radical" or attacking disease sect; the "Conservative", who restored the old medical books; and the "Moderate" or eclectic sect. Hospitals of the time were more "benevolent institutions" than medical centers; there were no medical societies and very little emphasis was placed on medical ethics[2].

Though the general tenor of this period is one of decline, there were a few outstanding physicians and works that should be mentioned. *Li Shih-chen* compiled the "Pen Ts'ao Kang Mu" or "Great Herbal", the best known work in China's medical field[1]. The famous "I Tsung Chin Chien" or "Imperial Rescript on the Medical Art, the Golden Mirror" was compiled at the order of the

Manchu Emperor, *K'ang Hsi*, and is still considered an authoritative encyclopedia of the best writings of the Han period. The "Four Literary Treasuries" (including a complete medical bibliography) were published at the end of the eighteenth century. *Wang Ching-jen*, sometimes called the "Reformer of Chinese Medicine", was the first person for many centuries to dissect the human body to learn its real anatomy. By studying the bodies of several executed persons he was able to correct many of the long-accepted inaccuracies. Despite this one scientific individual the medical practice of China was to follow the pattern laid down by the Han physicians until the impact of western medicine in the nineteenth and twentieth centuries aroused interest in the scientific approach.

The first contact with western medicine came during the sixteenth century, with the advent of Portuguese missionaries and traders. The first western hospital was established by Bishop Carneira in Macao in 1569. During the early seventeenth century Michael Boym wrote on the Chinese Pulse Doctrine and was the first to give to the western world some of China's medical lore. Just a few years later Jean Terrentius published a small treatise on human anatomy in Chinese and was the first to bring western medical knowledge to the Chinese scholars. These were the beginnings of an ever-increasing exchange that was to become heavily-weighted in favor of China and lead finally to the replacement of native medical practice, with its *Yin* and *Yang* and acupuncture and moxa, by western medicine, with its stethescope and microscope and x-ray, and above all, its scalpel.

Summary

China has made some truly distinctive and worthwhile contributions to medical practice. Hospitals were established in China long before such institutions were known elsewhere in the world. One Chinese claims that the circulation of the blood was known in China 2000 years before Harvey's time[3]. In the field of physiotherapy they have taught the world the value of massage, deep breathing exercises, and hydrotherapy. They were the first to use vaccination against smallpox, and their methods of psychotherapy were as effective as those of the twentieth-century psychiatrist in most respects. The Chinese introduced the use of chaulmoogra oil in leprosy during the fourteenth century and pioneered in the study and treatment of beriberi, smallpox and venereal diseases.

In diagnosis they emphasized inquiry (though of a limited kind), observation, listening to the voice and breathing sounds, and above all, the pulse. Aside from all the quackery that arose in connection with the pulse, many old-style Chinese doctors seemed to possess almost uncanny ability in making diagnosis by this method alone. Mention should be made, for its historical interest only, of the painful and futile therapeutic measures of moxa and acupuncture. Preeminent among Chinese contributions to medical science is their extensive knowledge of drugs, chiefly herbs, built up largely by empirical methods through the centuries. Ephedrine, iodine (for thyroid disease), and stramonium are well-known modern drugs that the Chinese have used for ages. Recent research has given some basis for belief that the use of toad skins and deer's horn has some scientific value[2].

It is evident that China's development along the lines of natural science did not keep pace with her cultural development along other lines. It is probable that a summation of factors was responsible. In the first place, the fact that the Chinese people had attained a high state of civilization by the Sung period made them inclined to be satisfied with themselves and to shut out stimulating influences from the outside. Their habit of "giving out" their cultural pattern to their neighbors, Korea, Annam, Japan and others, became so ingrained that they became unable to accept ideas from the outside, except to a limited degree. This state of self satisfaction did not prove as detrimental to her culture in general as it did in the mechanical and natural sciences, for it was along these lines that the outside world was making such rapid advance during the past four centuries. In the second place, the overwhelming power of a religious and philosophic tradition that opposed change and investigation into the workings of nature prevented the individual research that is a prerequisite to the development of a scientific, practical body of knowledge in any field.

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THE FIRST NATHALIE GRAY BERNARD LECTURES

Last summer it was voted by the students and faculty of the Bowman Gray School of Medicine of Wake Forest College to establish an annual lecture or series of lectures to be given by some eminent authority on a timely medical topic. Because of the great and generous interest she has manifested in the school, the lectureship was named for Mrs. Nathalie Gray Bernard. A joint committee was selected from the faculty and student body to secure a speaker and to set a date for the first series of lectures.

This committee made a very happy selection. Lieutenant Commander A. R. Behnke, M.C., of the United States Navy, who has done work of the greatest importance on the effects of changes in atmospheric pressure on divers and aviators, was the unanimous choice, and those who heard him were enthusiastic in praise of the entire series of three lectures. The first was given Tuesday night, January 12, in connection with the Forsyth County Medical Society's regular monthly meeting; the others were given on the nights of January 13 and 14. All the lectures were devoted to the general subject, "The Military Environment Primarily in Relation to Changes in Barometric Pressure." Dr. Behnke has agreed for all the lectures to be published in the NORTH CAROLINA MEDICAL JOURNAL.

In greeting the audience at the first meeting, Dr. C. C. Carpenter, Dean of the Bowman Gray School of Medicine, enumerated the contributions to charity, science, and education made by the woman for whom the lectureship was named, and in closing paid the following tribute to Mrs. Bernard: "To these benefactions one could add many anonymous acts of generosity and charity. These specific acts and diversified philanthropies could have been planned and executed only by one vitally concerned with the welfare of all mankind. That spirit is a vital part of all truly great medical schools. Thus a common bond is established and the faculty and students through this lectureship honor the one who has so genuinely honored us."

Thursday, January 14, was given over to a whole day of special features, and all doctors from neighboring counties were invited to be guests of the school, not only for the program, but for lunch and dinner. Dr. Harold W. Brown, Dean of the School of Public Health, University of North Carolina, spoke at 10:30 a. m. on "Dysentery", and at 4:30 p. m. on "Tropical Diseases." Both addresses were excellent, and they also are to be published in the NORTH CAROLINA MEDICAL JOURNAL. At 11:30 a. m. a medical clinic was given by Drs. Tinsley Harrison and Wingate Johnson, and at 1:30 p. m. a surgical clinic was given by Drs. Howard Bradshaw and James O'Neill.

The fact that the hospital amphitheater was filled to capacity for all features of the program, and the close attention paid by the audience testified to the interest taken in this brief postgraduate course. It is to be hoped that Dr. Behnke will repeat his visit many times.

A MILITARY PROBATIONARY PERIOD

Two years ago an editorial in the NORTH CAROLINA MEDICAL JOURNAL carried the following statement[1]:

"Much is said of the great expense incurred by the government in caring for soldiers who are found physically or mentally unfit after induction into the army. A simple and practical means of eliminating much of this expense would be to require the prospective soldier to serve a probationary period of three weeks to six months before he is actually accepted."

In the *New England Journal of Medicine* for January 14 Flicker and Coleman[2] conclude an excellent article on the subject of military discharge with the following recommendations:

"We believe that each selectee and enlisted man, prior to his final induction into the Army, should be placed in a replacement center for a probationary period of three months. During this time a competent psychiatrist should assist the company commander in weeding out those physically unfit for military duty before marked breakdowns occur or severe inadequacies make themselves apparent. The great majority of these cases, as well as most undetected psychoneurotic patients, could thus be eliminated without ever being actually inducted. This would save the Army the expense of many hospital days and spare the selectees the mortification of complete realization of failure.

"Furthermore, this trial period should be served without prejudice to the Government, and barring physical disability incurred during it, the enlisted man or selectee should have no claim against the Veterans' Bureau. This arrangement would make possible the saving of both time and money. It would also aid materially in eliminating future compensation claims. It is impossible to estimate how many constitutionally psychopathic persons and mental defectives are now collecting pensions because of a few months spent in an Army training camp in the last war. Judging from our experience, they spent even these few months in the hospital—their sole contribution then, as it is now—only to hinder the war effort."

It is gratifying to have such able backing for our position, and to feel that at last the NORTH CAROLINA MEDICAL JOURNAL is not a lone voice, crying in the wilderness.

1. Editorial, The Draft Board Examiners, North Carolina M. J. 2:94 (February) 1941.
2. Flicker, Captain David J. and Coleman, Major Olon H.: Military Discharge for Inadequacy, Report of 182 Cases, New England J. Med. 228:48-52 (January 14) 1943.

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THE BEVERIDGE REPORT

The Macmillan Company has published recently an exact reproduction of SOCIAL INSURANCE AND ALLIED SERVICES, which is the now famous Beveridge report. It is a volume of three hundred pages, bristling with tables and statistics, and makes bleak reading for all except those hardy souls who call themselves political economists. Despite its forbidding aspect, it should be in the hands of thoughtful medical men; for one of its basic postulates is "that all classes of the population will be covered financially for comprehensive medical treatment and rehabilitation, and for funeral expenses." This means that the practice of medicine in Great Britain, if this report becomes the law of the land, will become a function of the State, and private practice will disappear. The President has said recently that he wanted social security to cover all contingencies from the cradle to the grave, and Madam Perkins has published proposals which include medical care of the people as a function of government. The handwriting is clearly on the wall and the medical profession should read it with thoughtful care.

Without doubt the practice of medicine, as we know it, will undergo profound changes in the post-war epoch. It is of vital importance that our best medical leadership should aid in the development of social security; for otherwise the profession may easily find itself in an extremely unfavorable position. The adoption of an attitude of selfish obstruction will not do; we must be prepared to meet the reasonable demands for *better* medical care of the people, without the sacrifice of that independence and freedom which we like to believe is the American way of life.

The medical profession is *not* united, and there are some who doubt the *quality* of its leadership. Hitler's slogan is, "Divide and Rule," and this same method may easily lead to disastrous consequences for the medical profession.

THE CLINICAL USE OF THE SULFONAMIDES

One of the most valuable features of the excellent *New England Journal of Medicine* is its series of articles on Medical Progress. Among the best of these was an article by Dr. Charles A. Janeway[1], in the issue for December 31, entitled "The Sulfonamides: Their Clinical Use." This gave an admirable summary of the modern knowledge concerning this group of drugs.

The article was presented in the form of answers to a series of questions which constantly recur in medical practice. The answer to the first question, "What are the indications and contraindications for the use of the sulfonamides?" was prefaced by the statement that "it is as wrong to give them without special indications as it is to deprive a patient of their benefits when he is seriously ill." The indications were summarized in a table in which the drugs of first and second choice were named. The principle of sulfonamide therapy was summed up in the statement that "infections with susceptible organisms should be treated with sulfonamides only if they are severe or spreading." An exception was made of such relatively mild but potentially disabling and infectious diseases as gonorrhea, trachoma, lymphogranuloma venereum and other urinary tract infections. Another exception was made of severe undiagnosed infectious diseases, in which the physician is justified in giving sulfonamide therapy a three day trial. A third exception was made of the prophylactic use of the sulfonamides in the following conditions: "dirty, traumatic wounds; burns; influenza, during an epidemic when complicating bacterial pneumonia is frequently observed; known exposure to gonorrhea; cases of rheumatic or congenital heart disease for twenty-four hours before and seventy-two hours following dental extraction, tonsillectomy or any operative procedure that might permit the entrance of bacteria into the blood stream (in the hope of preventing bacterial endocarditis); and contamination of the peritoneal or pleural cavities."

The contraindications include any disease not favorably influenced by one of the drugs. Among these diseases are: "virus or atypical pneumonia and psittacosis; influenza, in the absence of secondary bacterial infection; common cold; typhoid fever; typhus and Rocky Mountain spotted fever; infections due to neurotropic viruses (poliomyelitis and encephalitis); acute exanthemata in the absence of secondary bacterial infection; mononucleosis, in the absence of secondary infection; puerperal infections due to anaerobic streptococci; urinary-tract infections due to enterococci; toxic manifestations of scarlet fever; diphtheria and tetanus."

The statement is repeated that the sulfonamides are not often effective when there is no fever. Janeway says that he rarely uses them unless the temperature exceeds 102 F. or unless there is evidence of extension of the infection, such as sinusitis, adenitis or otitis.

In a patient with a history of a previous severe reaction to a sulfonamide drug, "the physician should use a different sulfonamide and proceed with caution."

As to the choice of drug, Janeway states that "sulfadiazine is the drug of choice in the systemic therapy of all types of infection," with a few possible exceptions. Sulfathiazole is employed in infections of the urinary tract, because it "is rapidly excreted in high concentrations and hence gives best results on smallest dosage." In gonorrhea, sulfadiazine and sulfathiazole give equally good results, but Janeway prefers to save the former for use in more serious infections when larger doses must be given. In staphylococcal infections and gas gangrene sulfathiazole is perhaps the most potent of the sulfonamide group. In anthrax it and sulfapyridine are considered better than the other drugs.

Janeway stresses the importance of giving large initial doses, so that infections may be controlled before toxic effects begin. In the absence of dangerous side effects, he favors continuing the drug for forty-eight hours after evidence of infection has disappeared.

1. Janeway, Charles A.: The Sulfonamides. II. Their Clinical Use, New England J. Med. 227:1029-1044 (Dec. 31) 1942.

CASE REPORTS

CLINICO-PATHOLOGICAL CONFERENCE

Bowman Gray School of Medicine of Wake Forest College

The patient was admitted to the Forsyth County Hospital on September 12, 1942, complaining of abdominal distention for three weeks, "high blood pressure" for eighteen years, spells of giddiness and "shaking" since January, 1942. As early as May, 1942, she had suffered vague epigastric pains, not related to meals, and her physician had arranged for barium visualization of the gastro-intestinal tract. No evidence of disease was found. Abdominal distention had begun three weeks prior to admission.

The patient was born in South Carolina and had lived only there and in North Carolina. She had married at 15, had had ten children (three miscarriages), and had worked from childhood until the winter of 1941 as a field laborer. She had had pneumonia at 12 and had never had any other serious illness or consulted a physician thereafter until 1927. At this time she went to a doctor complaining of intermittent headaches and giddiness of three years' duration. These he attributed to hypertension.

No one in her family was known to have had cancer, tuberculosis, lues, or heart disease (although her mother died suddenly at 75). There was no history of alcoholism. The paternal history was unknown, as she was an illegitimate child. Her nine half siblings lived to marry and have children.

There had been no cough, sputum, hemoptysis, or night sweats. She had had no chest pain, dyspnea, cyanosis, or swelling of the ankles. Her appetite was good, although she had lost 40 pounds in the last seven years. She had been advised not to eat meat fifteen years ago because of hypertension, and had religiously followed this advice. There had been no jaundice, hematemesis or melena. She had never had piles and her bowel habits were regular. There were no abnormal symptoms from other systems.

This 82 year old Negress was stoop-shouldered, with moderate kyphosis of the dorsal spine. She could walk easily and balance well with her eyes closed and heels together. The wizened face, thin and inelastic skin, shrunken breasts, dry and brittle nails, arcus senilis, and the ocular cataracts supported her claim of being an octogenarian. Her eyes reacted to light and questionably to accommodation. There was no adenopathy in the cervical, axillary, or inguinal regions. The lungs were normal, and the heart was not enlarged to percussion. The abdomen was moderately distended, but soft (not doughy) and thin-walled, with physical signs of fluid (wave and shifting dullness). There were no dilated veins, tenderness, or abnormal masses. The spleen and liver were not felt; liver dullness was slightly reduced. There were no hemorrhoids, and pelvic examination showed only normal senile atrophy. There were no scars and no edema of the sacrum or extremities, but local wrinkling of the skin just above the ankles suggested that there had been some ankle edema.

Examination of the urine was negative. Examination of the blood showed 4700 white blood cells with a normal differential count, and 3,000,000 red blood cells, with a hemoglobin of 73 per cent (8.2 Gm.). The serum proteins were 6.58 per cent; serum albumin 1.79 per cent and serum globulin 4.79 per cent. The Wassermann test was negative.

An x-ray of the chest showed at the level of the third rib on the right, anteriorly near the periphery laterally, a small, bean-sized, discrete, opaque nodule due to a densely calcified primary tuberculous focus. The left lung fields were normal. The heart, aorta and trachea were normal. The comment was as follows: "The patient has a healed primary tuberculous infection, which at her age is of no clinical significance."

A tuberculin patch test was negative. Paracentesis was performed, and straw colored, cloudy fluid with a specific gravity of 1.022 was obtained. There was no clotting or separating into layers. The fluid boiled solid and there was a heavy precipitate with sulfosalicylic acid. It contained no sugar. Numerous red blood cells and lymphocytes were present, as well as plasma cells and mesothelial cell clumps, but there were no malignant cells.

An exploratory laparotomy was done.

Discussion

DR. ARTHUR GROLLMAN. The diagnostic problem in this patient resolves itself into the interpretation of the probable cause of

the observed ascites and abdominal distention. We are able to exclude most of the causes of ascites on the basis of the physical findings, history, and character of the fluid removed on paracentesis. In spite of the history of long standing hypertension we may exclude congestive heart failure because of the absence of general edema and other symptoms of cardiac insufficiency. Constrictive pericarditis is often accompanied by ascites as an early symptom, but the absence of evidence of increased venous pressure and exertional dyspnea would exclude this as a possibility. The abstinence from meat and the low blood serum albumin suggest nutritional edema as a possible factor in this patient, but this is ruled out by the fact that there was no evidence of peripheral edema and by the fact that the ascitic fluid was an exudate and not a transudate. This last finding also rules out circulatory disturbance. The high globulin content of the blood with a normal total serum protein also speaks against a nutritional disturbance and in favor of some chronic infection. The exudative nature of the ascitic fluid is incompatible with diseases in which there is an interference with the return of the blood flow from the lower part of the body, such as portal cirrhosis of the liver, Banti's disease, and so forth. Other evidence that there was no such interference is the absence of symptoms of dyspepsia, enlarged veins in the abdomen, hemorrhoids, or evidence of hepatic insufficiency. Peritoneal carcinomatosis must be considered as a possibility, but the absence of palpable nodules or cachexia, and the nature of the ascitic fluid render this unlikely. The presence of an exudate indicates some condition secondary to an inflammatory process. This fluid, with its predominant small lymphocytes and mesothelial cells, is of the type encountered in tuberculous peritonitis, which is the diagnosis that best accounts for the findings and history in this patient. At her advanced age, this disease is rare; but this fact does not exclude this diagnosis, since instances of tuberculous peritonitis in the aged, although uncommon, do occur. The rather chronic course, the insidious beginning with abdominal pain, the small amount of ascitic fluid, the absence of much fever, all conform with chronic tuberculous peritonitis as it occurs in the aged. The negative tuberculin test may be accounted for by the fact that an intradermal test with a sufficient dose of tuberculin was not made.

Clinical Diagnosis

Nutritional hypoproteinemia
Malignancy of unknown origin

Dr. Grollman's Diagnosis

Tuberculous peritonitis

Anatomical Discussion

DR. ROBERT P. MOREHEAD: A biopsy taken from the peritoneal lining revealed a chronic granulomatous inflammatory process with tubercle formation. Acid fast organisms were demonstrated and the process is obviously one of tuberculous peritonitis.

Anatomical Diagnosis

Tuberculous peritonitis

CLINICO-PATHOLOGICAL CONFERENCE

Duke Hospital

E. E. MENEFEE, M. D.
and
DOUGLAS SPRUNT, M. D.

DR. MENEFEE: A 38 year old white farmer entered Duke Hospital with the *chief complaint* of fever and weakness for five days. The *family history* and *marital history* were entirely non-contributory.

The *past history* revealed that the patient had always enjoyed excellent health. The only operation had been an appendectomy at the age of 28, with an uneventful recovery.

The *present illness* started seven days before admission to the hospital, when the patient noticed a small pustule on the dorsum of his right hand. Within two days the pustule had broken down, forming a small ulcer with a necrotic crater. At this time he began to have fever, which persisted, and daily hard, shaking chills which lasted about thirty minutes. Following the formation of the ulcer he developed swollen tender masses in the region of the right elbow and then in the axilla. Three days before admission he began to have a hacking cough, which produced from 30 to 90 cc. of purulent sputum daily.

The patient was a farmer who enjoyed rabbit hunting. Three weeks before admis-

sion—two weeks before the onset—, while he was hunting, his dogs caught a rabbit which he took from them and handled.

On *physical examination* the temperature was found to be 39.9 C., the pulse 100, respiration rate 26, and the blood pressure 128 systolic, 78 diastolic. The patient was an acutely ill white male, confused and disoriented. On the dorsum of the right hand there was a dry ulcer measuring 1.5 cm. in diameter, with a "punched out" appearance. The right epitrochlear node was quite large and tender, and extending from the elbow into the axilla was a palpable chain of lymph nodes. In the axilla itself the nodes were enlarged, tender and matted. There was no other lymphadenopathy. The pupils were round, regular and equal and reacted to light and on accommodation. The fundi were normal. The nose and ears were normal. The pharynx was slightly inflamed. Respirations were shallow. The percussion note was dull over the region of the right lower and middle lobes. In this area there were numerous medium and coarse moist rales, and also a few rales over the region of the left lower lobe. The heart was normal in size, the rhythm was regular, the sounds were of good quality, and no murmurs were audible. The spleen was palpable 5 cm. below the costal margin, and was quite tender. The liver was not enlarged. The rest of the physical examination was normal.

Accessory clinical findings showed a hemoglobin of 15.5 Gm., or 100 per cent, and a red cell count of 5,970,000. The white cell count was 4,400 with 69 per cent segmented polymorphonuclears, 5 per cent stabs, 1 per cent eosinophils, 6 per cent large lymphocytes, 18 per cent small lymphocytes, 1 per cent monocytes. The corrected sedimentation rate was 23 mm. per hour. Blood Wassermann, Kahn and Kline tests were negative. The urine was normal except for a trace of albumin. The blood nonprotein nitrogen was 51 mg. per 100 cc. X-rays of the chest were unsatisfactory, owing to the condition of the patient. Skin tests done with 0.1 cc. of 1-100 diluted anti-tularemic serum were negative. Agglutinations for tularemia, brucella, typhoid and paratyphoid A. and B. were all negative.

The patient's temperature ranged between 39.5 C. and 41 C. with a pulse of 100 to 140. Fluids were forced to 3500 cc. per day, and the patient was given 6 Gm. of sulfadiazine on the first day and 4 Gm. per day thereafter. On the day of admission anti-tularemic serum was given, and during the next four days he received a total of 150 cc. Despite this therapy the patient showed no improvement, and on the sixth hospital day his temperature fell precipitously and he expired.

Discussion

DR. MENEFEE: This is, I think, a typical case of tularemia of the ulcero-glandular type. We have a perfectly straightforward history of exposure to a rabbit, followed two weeks later by the primary skin lesion, then the involvement of the lymphatics, accompanied by chills and fever. Symptoms of pulmonic involvement followed, which is not unusual. The enlargement of the spleen is, of course, due to an acute splenic tumor.

Tularemia should be of great interest to all of us because it is a fairly common disease, and also because it has been worked up completely from beginning to end by American investigators. McCoy, working with ground squirrels in Tulare County, California, first isolated and described Bacterium tularense. Francis in 1919 and 1920, working with "deer fly fever" in Utah, recognized the disease and named it tularemia.

The disease may be transmitted to man by the bite of the horsefly, by certain ticks, by bites of animals, by contamination of exposed surfaces of the body with portions of infected rabbits, and by the ingestion of contaminated meat. The incubation period ranges from twenty-four hours to two weeks, averaging about four days.

In this particular case the only unusual factors are the negative agglutinations and the negative skin tests. I do not feel that the negative agglutinations should influence us at all. Most patients do not develop agglutinins until the second or third week. This was a fulminating case, and either the patient's body did not have time to respond, or the infection was so overwhelming that the usual immunological responses could not take place. The diluted serum skin test often becomes positive within the first day. This manifestation is supposedly due to the action between the antibodies in the serum and the antigen present in the patient's body. It must be carefully differentiated from the reaction which may result from the intracutaneous injection of any serum. Foshay, who first

described this reaction, used goat antiserum. We used horse antiserum, and perhaps this was why the test failed. If the patient's blood had been injected into a guinea pig I believe we would have isolated the Bact. tularense. However, this is a dangerous procedure, for practically every laboratory that attempts to culture Bact. tularense has infections develop in its technicians.

DR. D. T. SMITH: Wouldn't you consider a mycotic infection such as sporotrichosis?

DR. MENEFEE: I think the disease was too acute in onset and rapid in course to have been a fungus infection.

DR. F. M. HANES: I agree with Dr. Menefee that this is an instance of tularemia. We have the best reasons to make such a diagnosis—namely, the typical history and physical findings. In these days many physicians tend to lean too heavily on laboratory and accessory findings. They should remember that negative laboratory evidence is entirely useless; one can never rule out any disease merely because the laboratory tests are negative. If accessory aids are positive they are valuable adjuncts, but the basis of all diagnosis still is reliable history taking and careful physical examination.

Dr. Menefee's Diagnosis

Tularemia of the ulcero-glandular type.

Anatomical Discussion

DR. DOUGLAS SPRUNT: This is a typical case of tularemia of the ulcero-glandular type. The lesions everywhere show the characteristic areas of caseous necrosis, with some macrophages, but few if any giant cells and no stainable bacteria or fungi.

A section of the primary lesion on the skin shows a break in the epithelium. On the surface of this area are some contaminating bacteria and polymorphonuclear leukocytes; down in the tissues, however, there are no bacteria, but there is a marked mononuclear reaction.

The lymph nodes draining the primary site show a marked amount of caseous necrosis. The lymph nodes elsewhere also show considerable amounts of necrosis.

The liver and the spleen also show caseous necrosis and mononuclear infiltration.

In the lungs we find small focal areas of caseous necrosis and mononuclear cell reaction, but the predominant picture is one of an aspiration pneumonia.

Anatomical Diagnosis

Tularemia
Primary ulcer on dorsum of hand
Caseous necrosis of epitrochlear and axillary lymph nodes
Caseous tubercles in spleen, liver and lung
Aspiration pneumonia.

MEDICOLEGAL ABSTRACT

J. F. Owen, M. D., LL. B.
Raleigh

Workmen's Compensation: Employer must* pay compensation for death of employee *only when the death results proximately* from injury by accident arising out of and *in the course of employment.

This is a case originally tried before a single commissioner of the North Carolina Industrial Commission. The evidence tended to show that on July 17, 1939, a 65 year old man, the claimant's intestate, while washing windows in the gymnasium of a high school building, suffered a fracture of the right leg in two places when the ladder on which he was standing slipped from under him. Immediately thereafter he was given emergency treatment by a local physician, and was then sent to a hospital in a nearby city, where he was cared for by the attending surgeon. After returning home he was under the care of another physician for more than a month prior to his death on February 28, 1940. All of these doctors were of the opinion that the patient suffered, in addition to his injury, from a prostatic trouble, arteriosclerosis, myocarditis, and arthritis, all of long standing. The single commissioner felt that the patient died as a result of the injury, by accident that arose out of and in the course of his employment, and upon such findings an award of compensation was made against the County Board of Education and an insurance company. The case was appealed to the full commission, which agreed with the single commissioner, and awarded death benefits. The defendants appealed to the Superior Court, and the Judge of the Superior Court was of the opinion that the commission findings of fact and its decision and award were free from error of law, and entered the judgment affirming the same. The case was then appealed by the defendants to the Supreme Court.

When this case came on to be considered by the Supreme Court it was the opinion of the members of this tribunal that the evidence failed to show that the injury was of such a character that without it death would not have occurred. For this reason the decision of the lower court was reversed, and in substantiation of this reversal the court had the following to say:

"The evidence showed that plaintiff, a man of advanced years, who had an enlarged prostate gland, arteriosclerosis, myocarditis, and arthritis, all of long standing, accidentally fell and broke his leg, while working for defendant in the course of his employment, and by proper treatment his leg healed, but plaintiff died some seven months after the accident from arteriosclerosis, myocarditis, and arthritis, all of which may have been aggravated by his confinement while his leg healed. **Held:** Evidence will not support an award, as it is not sufficient to take the case out of the realm of conjecture and remote possibility."

This decision was presented primarily for the purpose of showing the legal principle involved, but in addition, it seems to serve as an excellent illustration of how medical witnesses may give conflicting testimony, and still be honest in their opinions. In a situation of this kind, it would be extremely difficult to determine just what effect a serious injury might have in a patient already suffering from the disorders enumerated above, and it should be mentioned in this connection that the Appellate Court itself felt that the patient's condition was aggravated by his confinement, but that the testimony was not such as to show definitely that the injury was the proximate cause of death. As a consequence the only course left open in this particular instance was to reverse the decision of the lower court. (Vol. 222, page 356. Decision rendered Fall Term, 1942.)

MILITARY MEDICINE

OFFICE OF CIVILIAN DEFENSE

OCD Blood Plasma Reserve

The Medical Division of the Office of Civilian Defense pointed out in a recent Medical Circular that plasma reserves are available in every Civilian Defense Region for use in the event of casualties resulting from enemy action or sabotage. The circular emphasizes that this plasma may be used for life-saving in any disaster. If OCD plasma is used in non-war related incidents, its use may be considered as a loan, and arrangements may be made later for its replacement, it is pointed out.

In cities where reserves are stored, they may be obtained by hospitals through the local Chiefs of Emergency Medical Service. If a community is without plasma or if its supplies are depleted, the local Chief of EMS may obtain additional plasma in emergencies from the State Chief of EMS.

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Gas Defense Organization Plan

Recommendations for the guidance of State and local defense councils in the organization of gas defense programs were recently issued by the Office of Civilian Defense through its Medical Division, which is responsible for the administrative and technical organization of gas protection, in Operations Letter No. 91 (Supplement No. 2 to Operations Letter No. 42).

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Plan For Protection of Water Supplies In War Emergencies

A plan of organization for an emergency program to assure adequate water supplies in the event of a war disaster is recommended in Circular, Medical Series No. 26, "Appointment and Duties of State and Assistant State Water Supply Coordinators," issued by the Office of Civilian Defense for the guidance of State and local Defense Councils.

The State Water Supply Coordinator is to be appointed as an official of the State Defense Council, on recommendation of the State Department of Health, the Circular advises. The Circular states that a member of the State agency having supervision over municipal water supplies would be a desirable appointee. He should work in close cooperation with the State Department of Health or other State agency responsible for waterworks and with the Regional Sanitary Engineers of the Office of Civilian Defense.

Chief Sanitary Engineer Transferred; Acting Chief Designated

Sanitary Engineer Director Ralph E. Tarbett, U.S. Public Health Service, who has served as Chief Sanitary Engineer of the Office of Civilian Defense since August, 1941, has been recalled to the Public Health Service by the Surgeon General, and Sanitary Engineer Gordon E. McCallum, who has been serving as Assistant Chief Sanitary Engineer, has been designated Acting Chief Sanitary Engineer in his stead.

BULLETIN BOARD

The following letter to Dr. Cobb clarifies the ruling on the use of automobiles for attending medical meetings.

Office of Price Administration
Raleigh, N. C.

January 18, 1943

Dr. Donnell B. Cobb, President
Medical Society of the State of
North Carolina
Goldsboro, North Carolina

Re: Driving to Medical Meetings

Dear Dr. Cobb:

I acknowledge your letter of January 16 regarding the above subject. Since meetings directly related to the occupation of a driver may be attended by a car, it is the opinion of this office that driving to attend a Medical Society Meeting, whether it be county or district wide in scope, is allowable under the present driving ban.

It is, however, necessary that such driving be done only in the event that other means of transportation are not available.

Meetings of an occupational nature which are not primarily related to the occupation of the driver but rather are of a social nature are not exempt from the pleasure driving ban.

Yours very truly,
W. K. BERNHARD
Assistant State Mileage
Rationing Officer

WAR PRODUCTION BOARD ORDER AFFECTS VITAMIN CAPSULES

To conserve vitamin A supplies during wartime, W.P.B. order L-40 limits the content of capsules to 5,000 vitamin A units.

In compliance with this order, capsules of Mead's Oleum Percomorphum 50% With Viosterol now contain 83 mg. of oil, equivalent to 5,000 vitamin A units and 700 vitamin D units per capsule.

The new size capsule is now supplied in boxes containing 48 and 192 capsules—about twice the number of capsules without increase in price.

News Notes From the State Board of Health

The North Carolina School of Public Health at Chapel Hill has been chosen as the institution through which funds made available by the W. K. Kellogg Foundation will be used for the training of students in public health education from all parts of the United States.

The selection was made by the United States Public Health Service, through which the funds will be administered. Twenty fellowships have been set up leading to a master's degree in public health. Training of the recipients of these, which will be granted to individuals of exceptionally high qualifications, will begin March 20. The summer quarter will be spent in the field and the next two quarters at Chapel Hill.

Fellowships are open to American citizens between the ages of 19 and 40 years, inclusive. Each person to whom one is granted must be the holder of a B. S. degree, or its equivalent, from a recognized college or university, with major emphasis on the basic health medical sciences such as physics, chemistry, biology, and physiology; education, with emphasis on educational psychology, and the social sciences.

This honor came to North Carolina in recognition of its outstanding work in the field of public health education. It was here that the first project of its kind in the United States was put into operation on an experimental basis and the success achieved brought the State distinction which led to its selection as a training ground for public health education specialists from all parts of the Union through the Kellogg Fellowships.

Public Health education programs already have been successfully carried out in various counties, including Cumberland, New Hanover, Wayne, Craven, Carteret and Robeson. These soon will be extended over other areas. In the beginning, this work was sponsored by the State Board of Health, in cooperation with the United States Public Health Service, but the Board of Health now is training its own workers at Chapel Hill. Three of these already have gone into the field and others will follow after the completion of their training. The Public Health Service furnished the personnel with which the original educational program was experimentally launched, with a view to the State's taking over at the proper time. This health educational work in the counties is carried on through the availability of federal funds, without cost to the taxpayers of North Carolina, as is the case with the School of Public Health at Chapel Hill, which has grown until it now has the largest full-time faculty of any similar institution in the United States. Its present staff is made up of eighteen full-time professors, one of whom is on leave and holds a high post overseas; six associate professors, seven research fellows and assistants, and thirty-three lecturers.

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As a result of a recent allocation of funds from the United States Children's Bureau to the Maternal and Child Health Service of the North Carolina State Board of Health, it is now possible for this division to provide financial aid for medical obstetric and pediatric care for wives and children of enlisted men and non-commissioned officers in the armed forces. Since the plan was put into effect, many pregnant women have been helped under its provisions.

Expectant mothers who need such assistance and want to apply for aid under this plan should see the local health officers, all of whom are well acquainted with its details. The health officers, in turn, forward the applications to Dr. G. M. Cooper, Director of the Maternal and Child Health Service of the State Board of Health in Raleigh.

"It is felt that this plan has been and will be of a great deal of benefit to both the patient and to the local physicians," Dr. Cooper said. "Delivery by the physicians in the patient's home is usually performed, but in certain cases, patients may be hospitalized for this service. In cases where this care is authorized through the local health officers, the physician's fee is paid from the Maternal and Child Health Service."

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With the cooperation of the United States Public Health Service, the State Board, through its Division of County Health Work, on January 4, launched an orientation course for emergency personnel. Lectures continued through January 16, after which the students spent several weeks in the field. There were in attendance approximately forty of these students, some already in service, others preparing to enter—but all eager to familiarize themselves with practices most needed during the critical period through which we are passing.

No State in the Union has made a greater contribution to the advancement of public health than North Carolina, Dr. W. K. Sharp, Jr., Director of United States Public Health Service District No. 2, told students attending this course. Explaining the relation of the United States Public Health Service to State health departments, Dr. Sharp emphasized that there is no attempt made to exercise any supervision from Washington and that the fact that funds are allotted to State and local departments does not mean that they are told what to do. The United States Public Health Service simply seeks to help and in no case to dictate, he continued. It was not until 50 years ago that the federal department had any power to cooperate with States, he said, and then it was only in the matter of helping to control the spread of communicable diseases.

It was not until 1935 that the United States Public Health Service was in a position to do very much for the States, the speaker went on. At first it secured an appropriation of $8,000,000 for distribution among them. The amount was raised to $9,500,000 and later to $11,000,000. However, he told the public health students, it is for the State health departments and not the federal agency to say what shall be done with funds allotted, distribution being based on three principles: Population, special health problems and economic needs. When representatives of the United States Public Health Service are assigned to work with State or local health departments they are subject to instructions from State health officers and must conform to the procedures in the territory to which they are assigned.

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To lower milk standards, even as a war measure, would surely increase prevalence of typhoid fever and tuberculosis, Dr. Milton J. Rosenau, of Chapel Hill, the first dean and now the director of the North Carolina School of Public Health, declared in a lecture before the group taking the State Board of Health's special orientation course for emergency personnel.

In spite of "new strong pressure to lower the standards of milk," Dr. Rosenau warned his hearers to stand firm in their protective attitude. Any relaxation now, he said, would bring about, all over again, "the unhappy conditions" which have been overcome in the fight against these two diseases.

NEWS NOTES FROM THE NORTH CAROLINA TUBERCULOSIS ASSOCIATION

Preliminary reports from Seal Sale Chairmen throughout North Carolina indicate that many communities are going to have the largest returns in the history of the Association. Final reports from 35 places show a Seal Sale of $5,400.72 this year as compared to $3,845.81 in these same places last year. This is an increase of $1,554.91.

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Dr. Charles E. Lyght has been appointed director of Health Education of the National Tuberculosis Association and assumed his new duties on January 1. He succeeds Dr. H. E. Kleinschmidt who resigned the directorship last summer. Dr. Lyght is well known in the tuberculosis field, having served for five years, 1937-42, as chairman of the tuberculosis committee of the American Student Health Association.

NEWS NOTES FROM THE BOWMAN GRAY SCHOOL OF MEDICINE OF WAKE FOREST COLLEGE

Lieutenant Commander A. R. Behnke, M.C., of the U. S. Navy, gave three addresses in the Nathalie Gray Bernard Lecture Series at the Bowman Gray School of Medicine on January 12, 13, and 14. The program presented in connection with this lecture series was as follows:

January 12, 8 p. m.: "The Military Environment Primarily in Relation to Changes in Barometric Pressure"—Lt. Commander Behnke.

January 13, 8 p. m.: Second address on the above subject by Lt. Commander Behnke.

January 14—

10:30 a. m.: "Dysentery"—Dr. Harold W. Brown, Dean of the School of Public Health, University of North Carolina.

11:30 a. m.: Special Medical Clinic, Dr. Tinsley R. Harrison, Professor of Medicine, and Dr. Wingate M. Johnson, Professor of Clinical Medicine.

1:30 p. m.: Special Surgical Clinic, Dr. Howard H. Bradshaw, Professor of Surgery, and Dr. James O'Neill.

4:30 p. m.: "Tropical Diseases"—Dr. Harold W. Brown.

8:00 p. m.: "Fitness for the Military Environment in Relation to Changes in Barometric Pressure"—Lt. Commander Behnke.

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On January 28 Dr. John H. Dingle of the Commission on the Control of Respiratory Diseases, Fort Bragg, gave an address on "Atypical Pneumonia".

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Dr. C. C. Carpenter, Dean of the Bowman Gray School of Medicine, attended a call meeting of the Association of American Medical Colleges in Chicago on February 13, 14, and 15.

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Dr. Tinsley Harrison, Professor of Medicine, gave two talks before the sectional meeting of the American College of Physicians held at the Mayo Clinic in Rochester, Minnesota, on February 5. His subjects were "The Interpretation of Pain in the Chest" and "Recent Advances in Hypertension".

FORSYTH COUNTY MEDICAL SOCIETY

The Forsyth County Medical Society met at the Bowman Gray School of Medicine on January 12 to hear an address in the Nathalie Gray Bernard Lecture Series given by Lieutenant Commander A. R. Behnke of the United States Navy.

NEWS NOTES

Dr. D. Heath Nisbet announces the re-opening of his office, Suite 222 Professional Building, Charlotte, on January 1, 1943. His practice is limited to Gastroenterology.

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Dr. Amor F. Pierce has opened offices for the general practice of medicine and surgery in the Nissen Building, Winston-Salem.

THIRTY-NINTH ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

The Thirty-Ninth Annual Congress on Medical Education and Licensure will be held in Chicago on February 15 and 16. The participating agencies will be the Council on Medical Education and Hospitals of the American Medical Association, the Federation of State Medical Boards, and The Central Council for Nursing Education.

THE NATIONAL FOUNDATION FOR INFANTILE PARALYSIS

General expansion and intensification of the nation-wide fight against infantile paralysis, with progress made in scientific attacks on the crippling disease, are disclosed in the fourth annual report of the National Foundation for Infantile Paralysis, issued by Basil O'Connor, President of the Foundation.

The included financial statement reveals 77 grants and appropriations totaling $1,142,009.35 for the fiscal year ended September 30, 1942. The money was disbursed to medical schools, hospitals, research laboratories, health institutes and foundations, from funds raised by the "March of Dimes" and Celebrations of President Roosevelt's Birthday.

In addition to its national program, the Foundation also expanded its local activities. During the year 450 county chapters were formed, so that today 2,900 of America's 3,070 counties are serviced by approximately 40,000 volunteer workers.

With half of the subscription money returned to the counties of origin, the total return to the nation's local chapters since inception of the National Foundation in 1938 has reached the figure of $4,751,626.80, according to the report.

Highlights of the National Foundation's achievements during the past fiscal year were:

Teaching of the Kenny method of treating after-effects, which entailed establishment of special training programs to provide doctors, nurses and physiotherapists to apply and carry on the method.

Broadening of study in search of a prevention and real cure.

Addition not only to knowledge of the nature of the virus but also the method of spread of the infection.

Reemphasis of the little appreciated role of "spasm" and other temporary symptoms that if untreated result in permanent damage.

Correlation of the study of infantile paralysis with studies of related encephalitis infections.

RESOLUTION

The following resolution relative to the proposed changes in membership of the North Carolina State Board of Health has been adopted by the Buncombe County Medical Society:

"Whereas, Senator Lee B. Weathers of Cleveland county has introduced into the State Senate at Raleigh, a bill—S.B. No. 40—having for its purpose the making of a drastic amendment to Section seven thousand and forty-nine of the consolidated statutes relating to the term of office and qualifications of members of the North Carolina State Board of Health, and;

"Whereas, the purpose of such amendment—regardless of the intent of its author—is to make it mandatory upon the governor, contrary to the existing statutes, to appoint as members of the State Board of Health a commercial dairyman, a food processor and an owner or operator of a restaurant, and;

"Whereas, the inevitable result of such a bill, should it be enacted, would be to jeopardize the efficiency of the State Board of Health by placing thereon men who, because of lack of special training, are in no sense qualified to act in the best interest of the people of North Carolina where scientific knowledge is essential and who, in the nature of things, would not be impartial in passing or in attempting to enforce necessary regulations which might bear hard upon the selfish interests of said members or of their supporters, and;

"Whereas, the governor of our state can be relied upon—as have been his predecessors in office—as the representative of the people who elected him, to appoint as members of the Board only such men as are qualified by experience and technical knowledge to act intelligently, justly and impartially in the passage and in the enforcement of regulations with the sole purpose of promoting health and preventing disease among all classes and conditions of men, and;

"Whereas, the governors of this state, justifying the confidence and the trust reposed in them by the people, have always used discretion and good judgment in such appointments, there seems no reason whatever—not even an excuse—to deprive the Governor of the right and the privilege, which he now enjoys, of having a free hand and an unhampered choice in appointing five members of the State Board of Health, and;

"Whereas, under the existing statutes, the work and the effectiveness of our State Board of Health has grown apace and increased year by year until, at the present time, it is at once the envy and the despair of our sister states, and;

"Whereas, because of the service which the State Board of Health has rendered to the people of this state and in recognition of the ever increasing need and demand for such service, the State Legislature, beginning with the modest appropriation of $100 in 1887, has increased the appropriations until in 1941 it reached the sum of $370,000, to which—and because of which—the Zachary Smith Reynolds Foundation added $162,000 and the U. S. Government added $723,000;

"Therefore, be it resolved by the Buncombe County Medical Society, in special session assembled, that, for the reasons set forth, it deplores and hereby voices its strong disapproval of S. B. No. 40, believing as it does, that—regardless of the good intentions which may have actuated Senator Weathers—he has been ill advised; and that this bill, if enacted into law, would make null and void any attempt by the State Board of Health to enforce sanitary regulations; and that it must inevitably result in subjecting the people of this state to greater hazards from disease.

(signed) J. LaBruce Ward, M. D.
H. G. Brookshire, M. D.
Grady Morgan, M. D.
Chas. A. Hensley, M. D.

ANNOUNCEMENT OF $1,000 AWARD

For Outstanding Research on Alcoholism During 1943

1. The research for which the award will be granted must contribute new knowledge, in some branch of medicine, biology, or sociology, important to the understanding or prevention or treatment of alcoholism.
2. Any scientist in the United States, Canada or Latin America is eligible for the award.
3. The project may have been inaugurated at any time in the past or during the year 1943, provided (a) that a substantial part of the work be carried on during the year 1943, (b) that it be developed to a point at which significant conclusions are possible before the end of the year, and (c) that a report on the work has not been previously announced and described before a scientific body or previously published.
4. It is desirable, but not necessary, that those planning to work for the award send to the Council before March 1, 1943, a statement of such intention. If the Council receives such information, it can be helpful in the prevention of undesirable duplication of effort. If a research project is conceived and inaugurated later in the year, 1943, a statement of intention may be sent to the Council at a later date.
5. A report on the work and resulting conclusions must be submitted to the Research Council on Problems of Alcohol on or before February 15, 1944. The Council will provide an outline for use in the preparation of reports.
6. The award will be in cash, and will be given to an individual scientist whose work is judged sufficiently outstanding and significant to merit the award.
7. The Committee of Award will consist of five persons—an officer of the American Association for the Advancement of Science, and four representatives of the Scientific Committee of the Research Council on Problems of Alcohol.
8. If the Committee is not convinced of the outstanding merit of the research done during 1943, as described in reports submitted, it may, at its discretion, postpone the award until another year, or until such time as work of such merit has been performed.

The Council will send on request, to any scientist, an outline of basic policies governing its research program, lists of Council studies (completed, under way and contemplated), and information regarding the studies of other agencies.

Scientists planning to do research in connection with the award may send a statement of intention to

The Director
The Research Council on Problems of Alcohol
Pondfield Road West
Bronxville, New York

GASTROENTEROLOGY NEW OFFICIAL JOURNAL OF THE AMERICAN GASTRO-ENTEROLOGICAL ASSOCIATION

The monthly journal **Gastroenterology** which began publication in January is the new Official Journal of the American Gastroenterological Association. Dr. W. C. Alvarez of the Mayo Clinic takes over the editorship and is assisted by Dr. A. C. Ivy of Northwestern University.

The nineteen members of the Editorial Board are top-ranking men in the fields assigned to them. The contributors are outst nding clinicians and investigators from all parts of the country.

A feature of value is the abstract section to appear in every number. It will be the most comprehensive service of its kind made possible by the cooperation of specialists in the many fields touching upon problems of gastroenterology.

The annual subscription price is $6.00.

AUXILIARY

REPORT OF THE NATIONAL DEFENSE CHAIRMAN

With all of us affected by the war and with so many members of our Auxiliary directly affected by having their husbands now serving with the Armed Forces, the National Defense Program of the Auxiliary has this year been one of particular interest to all of our members.

At the Fall Board Meeting it was recommended that for our National Defense Projects we continue to aid the Medical and Surgical Relief Committee of America through the sale of Mercy Emblems, and continue to promote interest among our members in first aid classes, nutrition, nurses aides, surgical dressings, canteen units, home nursing, establishment of blood banks, motor corps, war bond sales, victory gardens, entertainment of service men and any other work with the Red Cross or other organizations pertaining to National Defense. On both projects our Auxiliary has cooperated in a most wonderful way and our interest in National Defense is steadily growing.

The state-wide sale of Mercy Emblems was held on December 7, Pearl Harbor Day. Eight county societies cooperated in the sale, and at the present date, with only three reports in, the Auxiliary has already sent the Medical and Surgical Relief Committee $584.00 for the purchase of Emergency Medical Field Sets. I feel sure that we will reach our goal of $1000 by the end of the Auxiliary year.

Our members throughout the state are cooperating with their local Red Cross and defense organizations by giving their services and time to the various defense projects mentioned. It will really be amazing when at the end of our Auxiliary year we know the total number of hours given to these various projects by YOU.

As Defense Chairman I am asking each society this spring to collect any unused instruments and supplies from our doctors. The defense chairman of your society has a list of the instruments and supplies needed by the Medical and Surgical Relief Committee. You are asked to turn your collection in to your local chairman. Won't you cooperate with this appeal in the same way you have with our other projects?

May I take this opportunity to thank all of you for your wonderful cooperation with our National Defense Program and to say to you: Continue to be soldiers like your husbands, whether they are serving with the Armed Forces or at home, by keeping up your morale and giving your time and services to the home front projects.

MRS. JOHN C. REECE

OUR MEN NEED
★ BOOKS ★
SEND
ALL YOU CAN SPARE
Help a man in uniform enjoy his leisure hours. Give your good books to the 1943 VICTORY BOOK CAMPAIGN. Leave them at the nearest collection center or public library.

BOOK REVIEWS

Surgical Pathology. By William Boyd, M.D., LL.D., M.R.C.P.Ed., F.R.C.P. Lond., Dipl. Psych., F.R.S.C., Professor of Pathology, University of Toronto. Fifth Edition, Thoroughly Revised. 843 pages with 502 illustrations and 16 colored plates. Price, $10.00. Philadelphia and London: W. B. Saunders Company, 1942.

The fifth edition of this useful book has undergone a marked change. The old indefinite drawings of microscopic lesions have been replaced, for the most part, by excellent photomicrographs. Newly recognized and described disease processes affecting the field of surgical pathology have been added. The increased utilization and importance of surgery in diseases involving the thoracic contents is recognized by the addition of a new chapter on the "Surgical Pathology of the Thorax." The bibliography at the end of each chapter lists the most important references to the given subject. In so far as it is possible, these references are in recent literature.

The adverse criticism of the book is all of a minor nature, with the exception of the failure to include information on tumors of the larynx and accessory nasal sinuses. The use of the term "sarcomatous degeneration" in referring to a malignant change in a leiomyoma of the uterus is condemned by a majority of surgical pathologists. Enterobius vermicularis is now the accepted term for the pin worm instead of "Oxyuris vermicularis". A few incorrectly spelled words were noted.

The author handles the difficult controversial issues such as the "chronic appendicitis" problem very nicely in his highly commendable style of writing.

Boyd's **Surgical Pathology** is recommended to those who desire a general view of the pathological processes operating in those conditions which confront the surgeon.

Autonomic Regulations. Their Significance for Physiology, Psychology and Neuropsychiatry. By Ernest Gellhorn, M.D., Ph.D., Professor of Physiology, College of Medicine, University of Illinois. 373 pages, with 80 illustrations and frontispiece. Price, $5.50. New York: Interscience Publishers, 1942.

The animal organism is a complex mechanism requiring the mutual cooperation of many organs and bodily reactions. This interrelationship is maintained by various chemical, physical, hormonal and nervous reactions and in a broad sense may be designated as autonomic regulation. The autonomic nervous system is primarily involved in this regulation, as are also certain regulatory centers such as the hypothalamus. Although physicians have for a long time appreciated the importance of autonomic regulations in health, lack of physiological data has made it difficult to understand the part which aberrations in autonomic regulation play in various disease processes. Dr. Gellhorn, in the present monograph, has very clearly reviewed the recent physiological advances in this field and shown how they can be applied to the "organismic" concept of the individual. Although it does not deal specifically with problems related directly to clinical practice, the inquiring physician will find much in this volume to stimulate his understanding of the human organism in its response to the external environment and to those deviations from normal which occur in disease.

Fundamentals of Psychiatry. By Edward A. Strecker, M. D., Sc. D., F. A. C. P., Professor of Psychiatry and Chairman of the Department, Undergraduate School of Medicine, University of Pennsylvania; Psychiatrist to the Pennsylvania Hospital; Attending Psychiatrist, Psychopathic Division, Philadelphia General Hospital. 201 pages. Price, $3.00. Philadelphia: The J. B. Lippincott Company, 1942.

Dr. Strecker's excellent and well deserved reputation is a guarantee of the soundness of the principles of psychiatry set forth in this little volume. It gives in compact form a working knowledge of the fundamentals of his chosen specialty. It was written in recognition of the urgent need arising out of the present world conflict. Its purpose is well expressed in the author's foreword:

"Each doctor, whether he is a medical officer or remains in civil life to give medical aid to the noncombatant population, must needs acquire a minimum of psychiatric information and skill.

"It requires about five years to train a medical man as a psychiatrist. Obviously, it would not be feasible suddenly to make a large number of physicians into psychiatrists. Yet it is a matter of great urgency that a workable knowledge of psychiatry be made available. In the hope of supplying briefly and concisely this need, this handbook of psychiatry is presented to the medical profession, civilian and military."

As might be expected, its very compactness means that no one subject can be covered in detail, and for information on some specific case, a larger and more comprehensive treatise would perhaps be consulted. To one who wants a rapid survey of the whole field of psychiatry, however, this volume can be heartily recommended.

Principles of Extraperitoneal Caesarean Section. By James V. Ricci, M. D., Associate Clinical Professor of Gynecology and Obstetrics, New York Medical College; Attending Gynecologist, New York City Hospital; and James Pratt Marr, M. D., F. A. C. S., Associate Attending Surgeon, Woman's Hospital in the State of New York; Adjunct Professor of Obstetrics and Gynecology, New York Polyclinic Hospital: Diplomate American Board of Obstetrics and Gynecology. 224 pages, with 47 illustrations. Price, $4.50. Philadelphia: The Blakiston Company, 1942.

This book is an excellent monograph on the general subject of cesarean sections. It is written in an interesting manner, and a complete review of the history of cesarean sections is included. The earliest efforts to do extraperitoneal cesarean sections are reviewed, and the methods and results are described in considerable detail.

This volume serves as a complete reference book on this subject. There is a voluminous bibliography and an excellent review of the literature. The anatomy is described in detail and there are excellent illustrations. Particular attention is given to the extraperitoneal cesarean section. There is a chapter on the incisions, scars, and ruptures of the lower segment, with a critical analysis of the advantages of the various types of lower uterine incisions. The reports of rupture of lower uterine segment scars are collected. All of the methods of extraperitoneal cesarean section are described in a clear and concise manner.

This book belongs in the library of every obstetrician.

Genetics for Medical Students. By E. B. Ford, M.A., B.Sc., Reader in Genetics, University of Oxford. 162 pages. Price, $2.50. London: Methuen & Co., Ltd., 1942. Published in Canada by Reginald Saunders, Toronto.

In the opinion of the reviewer the title of this book is somewhat misleading. One would expect that a volume with this title would deal primarily with the medical aspects of genetics, but this is not the case. The material covered is a condensation of the principles of genetics to be found in any college textbook of genetics, with occasional illustrations from human material. The principal items discussed include Mendel's Laws, linkage, crossing over, multiple alleles, sex-determination, mutation, evolution, and gene physiology. In the attempt to cover a wide field in so short a space clarity of description is sometimes sacrificed. Although the terms "backcross", "F1 generation" and "F2 generation" are quite useful in experimental genetics to denote specific genotypic matings, the use of these terms in human genetics is confusing and unfortunate. Twenty pages are devoted to discussion of the blood groups, but the scattered discussions of human pathologic genes probably do not occupy this much space. The statement that retinitis pigmentosa inherited as an autosomal recessive is always associated with deafness is, of course, in error.

If this book is considered as a brief compendium of the principles of genetics, it covers a wide field and is accurate and well written. It is recommended to anyone who desires a short exposition of genetic laws without extensive reference to the experimental work on which they are based.

Psychologic Care During Infancy and Childhood. By Ruth Morris Bakwin, B.A., M.A., M.D., Assistant Clinical Professor of Pediatrics, New York University College of Medicine; Director of Pediatrics, New York Infirmary for Women and Children; Assistant Pediatrician, Bellevue Hospital; and Harry Bakwin, B.S., M.D., Associate Professor of Pediatrics, New York University College of Medicine; Associate Pediatrician, Bellevue Hospital; Consultant, Middletown Hospital, Middletown, New York. 317 pages. Price, $3.50. New York: D. Appleton-Century Company, Inc., 1942.

In the preface to this book the authors state: "In a field where so much is controversial it is important that the physician remain as nearly as possible within the realm of common sense and experience." The book itself naturally cannot instruct one in how to acquire common sense, and, furthermore, too little of the authors' experience is disclosed. The title gives a false idea of the contents, because, although the description of the psychological problems of childhood—including everything from phenylpyruvic oligophrenia to constipation — is quite complete, nothing more than general statements is given in regards to management of these problems or correction of overindulgence, overanxiety, overprotection, over- and under-affection, rejection, etc. in the parents. For one who has no knowledge of children the book may be of value in disclosing the great importance of parental training and example in mental hygiene. However, if one expects to discover the all important details of correction of parental behavior and attitudes, he will be disappointed.

Arthritis in Modern Practice. The Diagnosis and Management of Rheumatic and Allied Conditions. By Otto Steinbrocker, B.S., M.D., Assistant Attending Physician and Chief, Arthritis Clinic, Bellevue Hospital, Fourth Medical Division, New York City. With Chapters on Painful Feet, Posture and Exercises, Splints and Supports, Manipulative Treatment and Operations and Surgical Procedures, by John G. Kuhns, A.B., M.D., F.A.C.S., Chief of the Orthopedic and Surgical Service, Robert Breck Bingham Hospital; Assistant Visiting Orthopedic Surgeon, Boston Children's Hospital. 606 pages. Price, $8.00. Philadelphia: W. B. Saunders Company, 1941.

This book does just what it claims to do: gives a clear presentation of all forms of arthritis, their diagnosis and treatment. Explicit directions about all forms of therapy, including diet, that the authors have found helpful, are given; but the book is not loaded with extraneous matter. A valuable feature is a twenty-page glossary of signs, syndromes and other data related to rheumatic disorders. It can be heartily recommended to any doctor who wants to learn more about this important subject.

A DOCTOR'S PLEA IN WARTIME*

The doctor's life, in times like these,
Is not exactly one of ease.

For, on the home front, each M. D.
Is busier than any bee!

He's shouldering the burden for
The other docs, who've gone to war.

This leaves your doctor precious little
Time to sit around and whittle.

And indicates the reason why
You ought to help the poor old guy.

HOW?

1. *By keeping yourselves in the best of condition*
   Thus avoiding the ills that demand a physician.

2. By phoning him promptly when illness gives *warning,*
   But—unless very serious—waiting till morning.

3. By cheerfully taking whatever appointment
   He makes for prescribing his pills or his ointment.

4. By calling on him where he works or resides
   Instead of insisting he rush to your sides.
   (Of course, he'll come 'round when there's need for his service
   But spare him the trip when you're *nothing* but nervous.)

5. And, last but not least, you can help in the crisis
   By carefully following Doctor's advices.

* * *

If these commandments you'll adhere to
A doctor's heart you will be dear to!

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